VIDEK

VisionSensor™ 2030

Statement of Agency Compliance

The VS 2030 has been tested for compliance with FCC regulations and was found to be compliant with all applicable FCC Rules and Regulations.

IMPORTANT NOTE: To comply with FCC RF exposure compliance requirements, this device must not be co-located or operate in conjunction with any other antenna or transmitter.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The VS 2030 has been tested for compliance to CE standards and guidelines and was found to conform to applicable CE standards, specifically the EMC requirements EN 55024, ESD EN 61000-4-2, Radiated RF Immunity EN 61000-4-3, ENV 50204, EFT EN 61000-4-4, Conducted RF Immunity EN 61000-4-6, EN 55022, Class B Radiated Emissions, and Class B Conducted Emissions.

The VS 2030 can be set to use targeting lasers. The VS 2030's targeting laser emits Class 2M radiation outside of the product per IEC 60825-1. Class 2M Laser/LED product. Do not stare into beam or view directly with optical instruments.

The VS 2030 has been tested by an independent electromagnetic compatibility laboratory in accordance with the applicable specifications and instructions.
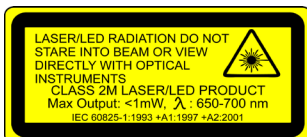
37AW US LISTED E300884

Laser/LED Radiation

Wavelength: 650-700 nm
Maximum Output: <1mW
Laser Pulse Duration: 0.977 mSec.
LED Pulse Duration: 0.255 uSec.

Laser aperture

LASER/LED RADIATION DO NOT STARE INTO BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENTS
CLASS 2M LASER/LED PRODUCT
Max Output: <1mW, λ : 650-700 nm
IEC 60825-1:1993 +A1:1997 +A2:2001
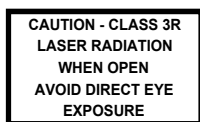
Enlarged for readability

A Warning Label (see left) is located on the underside of the VS 2030 near the battery locking mechanism as pictured (see right).

CAUTION - CLASS 3R LASER RADIATION WHEN OPEN AVOID DIRECT EYE EXPOSURE

Enlarged for readability

Videk voids product warranty if the hard case has been opened or tampered with in any way. Opening the case may put the user at risk of laser radiation exposure (Class 3R). A second Warning Label (see left) is placed within the casing structure as pictured (see right).

Caution – Use of controls or adjustments, or performance of procedures other than those specified herein may result in hazardous radiation exposure.

In addition, a CB Test Certificate has been issued by the National Certification Board (NCB) indicating VisionSensor 2030 (VS 2030) meets all safety and quality standards in accordance to IEC 60950-1:2001, First Edition.

VisionSensor 2030 User Manual

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VisionSensor, Clearly a Company With Vision

All other product names mentioned in this manual may be trademarks of their respective companies and are hereby acknowledged.

The software and/or products of Videk, Inc. include inventions that are patented or that are the subject of patents pending. U.S. Patents: 6997387, 6619547, 6736320, 7014113, 6942152, 7036735, 7097099, 6957769

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www.videk.com

Table of Contents

Chapter 1 - Getting Started

1.1 - Introduction

The VisionSensor 2030 (VS 2030) establishes a new benchmark for Portable Data Terminals and Hand Held Computers by combining the industry's best imaging technology with a graphic display and rugged keyboard to create the smallest and lightest full-featured bar code reading terminal on the market.

Using the same ergonomic platform as the highly successful VisonSensor 2020, the VS 2030 extends mobile all-symbology bar code reading to include information display and keyboard entry.

The VS 2030 instantly reads postal codes and large 1D codes as well as high density 2D matrix symbols due to the unique Dynamic Optimization Technology (DOT), which continuously adapts the resolution, illumination, and image field for the fastest automatic symbology identification and decoding over the widest range of symbology types, sizes, recording surfaces and ambient lighting. With DOT, the VS 2030 achieves matrix symbol decoding at speeds that are similar to linear bar code decoding, while preserving battery energy. By monitoring each user's reading patterns, DOT reduces training time and eliminates the need for manual configuration optimization through parameter settings.

Featuring

D T

The VS 2030 features a 1.3 MegaPixel dual-field image collection engine, a 400MHz AMD Alchemy Au1100 CPU, and 8MB of non-volatile memory. Portable operations are supported by a 1950 mAH Lithium Ion Battery and a Real Time Clock with its own battery backup system.

The VS 2030 will instantly decode all postal, bar and 2D codes

1.2 - Unpacking

Remove the VS 2030 from its packing and inspect it for damage. If the scanner was damaged during shipping, please call Videk at (585) 292-6210 or (800) 24-VIDEK.

The standard VS 2030 unit is shipped with a USB cable interface. The unit also features a 1950 mAH battery-handle that must be installed in the unit at all times.

Various accessories are available for the VS 2030.
- External battery charger
- Power Supplies
- RS232 and USB cables

Please keep your packing materials. The VS 2030 is shipped in an approved shipping container and should be used if you ever need to return your equipment for servicing.

1.3 - Powering On/Off Reader

To power on the reader, press and hold either of the red trigger buttons for 3 seconds (shown at right) or squeeze the trigger on the pistol grip for 3 seconds.

The reader will power down after 2 hours of non-use. To change the default settings, please see Section 4.7 - Reader Sleep/Time Out settings.

1.4 - Keypad/Icon Overview

The chart below shows key/button functions.

Key	Description of Button Function			
	Numeric Mode	**Upper Case Text Mode**	**Lower Case Text Mode**	**Symbol Mode**
SHIFT	Toggles between numeric characters, upper case text, lower case text, and symbol character input	Toggles between numeric characters, upper case text, lower case text, and symbol character input	Toggles between numeric characters, upper case text, lower case text, and symbol character input	Toggles between numeric characters, upper case text, lower case text, and symbol character input
1 space	1	Space, 1	Space, 1	Space) < _
2 ABC	2	A, B, C, 2	a, b, c, 2	! * = `
3 DEF	3	D, E, F, 3	d, e, f, 3	" + > {
4 GHI	4	G, H, I, 4	g, h, i, 4	# , ? |
5 JKL	5	J, K, L, 5	j, k, l, 5	$ - @ }
6 MNO	6	M, N, O, 6	m, n, o, 6	% . [~
7 PQRS	7	P, Q, R, S, 7	p, q, r, s, 7	& / \ Space
8 TUV	8	T, U, V, 8	t, u, v, 8	' :] Space
9 WXYZ	9	W, X, Y, Z, 9	w, x, y, z, 9	(; ^ Space
0 ↻	0	0	0	Toggles between 4 sets of symbols – when pressed, the current symbol set is displayed
CLEAR	Backspace and clear messages	Backspace and clear messages	Backspace and clear messages	Backspace and clear messages

Note: All characters represented in this table are for ASCII mode.

The chart below shows all of the icons and their definitions.

Icon	Description
Power Icons	
	50% to 100% capacity of battery
	20% to 50% capacity of battery
	0% to 20% capacity of battery – recharge battery as soon as possible
	Battery is recharging
	No icon is displayed when battery blank is used with a cabled reader
Connection Icon	
	Reader is connected physically to a receiving device (computer, handheld, etc.) Note: Some RS232 configurations can not be detected
	No icon is displayed when the reader does not detect a connection
Communication Mode Icons	
	RS232 communication mode enabled
	USB communication mode enabled
Packet Mode Icons	
	One way mode – no acknowledgement required
	Two way mode – packetized, bidirectional communication between a VS 2030 and an application (may also indicate download mode)
	Downloader mode
	Keyboard mode – can be used as a USB keyboard
	Virtual COM Port One Way mode
	Secure mode – data encryption mode enabled
Memory Icons	
	No stored data
	Some stored data
	Memory is at least 90% full
	No batch mode – data will not be stored in the reader's memory if not connected
Input Mode Icons	
	Caps Lock – data entered manually on the keypad will be in capital letters
	Lower Case – data entered manually on the keypad will be in lower case letters
	Numeric – data entered manually on the keypad will be numeric
	Symbol – data entered manually on the keypad will be symbols
	Locked – buttons pushed on the reader's keypad will be ignored

1.5 - Batch Operation

1.5.1 - Introduction

Batch data storage and data transfer are controlled by the resident JavaScript application on your VS 2030 reader. Under the default factory settings, batch mode is enabled.

When the VS 2030 is NOT connected to a host PC or other device, it will store reading data. Then when subsequently connected to a host device the VS 2030 will automatically upload all of the read data and erase it from its memory.

MAKE SURE that when the VS 2030 is connected to the host device that the appropriate application is open and active on the host device. If not, the read data will be lost.

1.5.2 - RS232 Considerations

In RS232 Batch Cable-Detect mode, the VS 2030 will detect if it is connected to a powered serial cable, and will send the data. If a powered serial cable is not connected or if the power adapter is not connected to the serial cable, the VS 2030 will buffer the data. When the VS 2030 is then connected to a powered serial cable, the data will automatically upload and be erased from the VS 2030 memory.

In RS232 Cabled - No Power mode, the VS 2030 will behave as if it is always connected even though the serial cable is disconnected or the power adapter is unplugged. Scanned data will be sent, regardless of connection status. Data scanned in Cabled mode will be lost if the VS 2030 is not connected to the serial cable. It will not buffer the data, unless Send & Store mode has been enabled.

Important Note: If you are in RS232 Cabled-No Power mode, when you place a unit in a charger the reader will behave as if it is being cabled, and download the data. THE DATA WILL BE ERASED FROM MEMORY. To disable this feature, scan the RS232 Cable - Detect code.

RS232 Batch Cable-Detect - Default

M073_02

RS232 Cabled - No Power

M074_02

NOTE: After making changes to settings by scanning the setup/configuration codes, always scan the "SAVE SETTINGS" code at the bottom of the page to assure that the new settings will be saved in the VS 2030 memory for use the next time the reader is powered on.

Save Settings

M188_02

1.6 - Cabled Operation

1.6.1 - Introduction

The VS 2030 is available with USB and RS232 cables. All of the cables are connected to the VS 2030 with an 8-pin DIN connector. Different cables may be required for different hosts.

To install a cable on the standard unit, correctly line up the 8-pin DIN connector into back end of the unit. The arrows on the connector should be facing down. When they are lined up, firmly push the cable in. The cable has a locking mechanism that will firmly hold the cable in place.

To detach the cable from the reader, **YOU MUST** grip the plastic on the 8-pin din and pull back to disengage the connector.

1.6.2 - USB Cable Installation Guide

To connect the VS 2030 to your host computer via USB interface:

1. Make sure the USB cable is sufficiently attached to your VS 2030 unit.

2. You **DO NOT** need to power off your host computer. The VS 2030 with USB interface can be plugged into any host while the computer is powered up.

3. Connect the USB interface cable to the host. If you are unsure of the proper location to connect the USB cable please consult the manual of your host computer.

4. The USB interface does not require additional power supply. The VS 2030 will automatically recharge the battery whenever the unit is attached to a host that is powered up.

5. The VS 2030 will power on automatically.

6. Your VS 2030 unit should be ready for use. Open the application on your host computer to which you wish to send data and begin scanning.
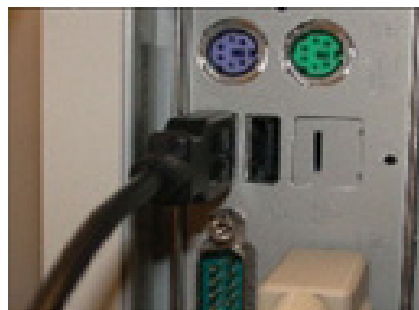
1.6.2.1 - USB Communication Settings

USB Keyboard Mode - Data is sent from the Reader and interpreted by the host just as if a US keyboard was being used to enter data.

USB Downloader - This mode is the standard way of transferring batch files or new firmware through the USB port.

USB Native Two Way Mode - This mode is utilized when there is a need for error-corrected communication between the VS 2030 and an application through the USB port.

USB Virtual COM 1 Way Mode - This mode allows a USB-cabled VS 2030 to function as a virtual COM port. To use the VS 2030 in this mode, download the driver at www.videk.com

Scan the following codes to set the appropriate USB communication setting:

USB Keyboard (Default)

M134_02

USB Downloader

M133_01

USB Native Two Way Mode

M135_04

USB Virtual COM 1 Way Mode

M668_01

You must first install the virtual com port driver before utilizing this mode.

Reset to USB Factory Defaults

M049_03

NOTE: After making changes to settings by scanning the setup/configuration codes, always scan the "SAVE SETTINGS" code at the bottom of the page to assure that the new settings will be saved in the VS 2030 memory for use the next time the reader is powered on.
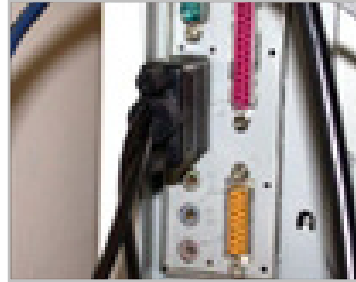
1.6.3 - RS232 Cable Installation Guide

To connect the VS 2030 to your host computer via RS232 interface:

1. Make sure the RS232 cable is sufficiently attached to your unit.

2. Connect the RS232 interface cable to your host computer. If you are unsure of the proper location to connect the RS232 cable please consult the manual of your host computer.

3. The RS232 interface is supplied with a power supply. Plug the power supply adapter into the RS232 interface cable and then plug the power adapter into a wall socket.

   If you are using the RS232 interface and utilizing Batch functionality, please read the Important Note in batch section. If you are using the 1950 mAH battery for batch mode, the RS232 cable will recharge the VS 2030 battery only if the RS232 cable has a power supply connected and the power supply is plugged into a socket.

4. The VS 2030 will power on automatically.

5. Scan the RS232 One Way Mode code then the Save Settings code to configure reader:

   RS232 One Way Mode

   M131_01

   Save Settings

   M188_02

   RS232 Factory Default Settings
   Mode: RS232 One Way Mode
   Baud Rate: 57600
   Stop Bits: 2
   Data Bits: 8
   Parity: None

6. Your VS 2030 unit should be ready for use. Open the application on your host computer that will receive scanned data and begin scanning.
   Warning: Videk, Inc.-approved power adapter must be used. Reader failure due to use of incorrect power adapter will void all warranties.

Save Settings
M188_02

1.6.3.1 - RS232 Communication Data Bit Settings

Scan the following codes to set the appropriate data bit:

7 Data Bits

M100_01

8 Data Bits (Default)

M101_01

1.6.3.2 - RS232 Communication Stop Bit Settings

Scan the following code to set the appropriate stop bit data:

2 Stop Bits (Default)

M106_01

1.6.3.3 - RS232 Communication Baud Rate Settings

Scan the following codes to set the appropriate baud rate:

1200

M092_01

2400

M093_01

4800

M094_01

9600

M095_01

19200

M096_01

38400

M097_01

57600 (Default)

M098_01

115200

M099_01

1.6.3.4 - RS232 Communication Parity Settings

Scan the following codes to set parity:

Even

M102_01

Odd

M104_01

None (Default)

M103_01

Save Settings

M188_02

1.6.4 - Cabled Reader - Time Out Settings

Scan one of the codes below to set the amount of time a cabled VS 2030 will be enumerated before entering sleep mode. The battery is re-charged at the fastest rate when VS 2030 is in sleep mode:

Cabled - 2 hours   **Cabled - Always (Default)**

M136_01   M137_01

1.7 - Reader Feedback Guide

The chart below shows potential icon combinations. Consult the chart to verify a configuration.

Possible VS 2030 Configurations	
RS232	**USB**
RS232 One Way Mode This mode is the standard way of transferring unformatted, unpacketized data through the serial/RS232 port.	**USB One Way Mode** This mode is the standard way of transferring unformatted, unpacketized data through a USB port.
RS232 Two Way Mode This mode allows for reliable communication by utilizing packet acknowledgement protocol.	**USB Two Way Mode** This mode is utilized when there is a need for packetized, bidirectional communication between the VS 2030 and an application through a USB port. **USB Keyboard Mode** This mode emulates the transfer of data from the VS 2030 to a host computer via a keyboard interface.
RS232 Secure Mode This mode is utilized for transferring data in an encrypted format from the VS 2030 to a host computer through the serial/RS232 port.	**USB Virtual COM Port 1 Mode** This mode allows communication between a USB port and an application expecting serial input. A virtual com driver must be loaded onto the host computer before reader can be utilized in this mode. ** See Note.
	USB Secure Mode This mode is utilized for transferring data in an encrypted format from the VS 2030 to a host computer through a USB port.
	USB Downloader Mode This mode is used when downloading firmware changes to the reader.

1.8 - Targeting and Reading Techniques

The VS 2030 utilizes digital camera technology to take a picture of a symbol. Once an image is captured, the VS 2030 utilizes advanced decoding algorithms to extract data from the captured image.

The VS 2030 features left and right triggers (the red buttons on the top of the reader). These triggers may be programmed to perform various features. The reader is shipped with the left trigger and right trigger functioning as a decode symbol command.

The handle has a trigger on the grip. The two triggers on the top of the unit also work when the handle is attached.

To read a symbol with the VS 2030:

1. The VS 2030 features omnidirectional decoding. Center the symbol in any orientation within the laser dot aiming pattern.

   Note: The VS 2030 can read a symbol that is not centered; however, the VS 2030 performs best when a code is centered. If two (2) bar codes are with the imagers decode zone, the VS 2030 will decode the symbol closest to the center of the aiming dot.

2. The VS 2030 was developed to decode both very small 2-dimensional symbols and larger 1-dimensional symbols. The unit has an innovative dual field decode zone. The VS 2030 **DECODES BOTH ZONES SIMULTANEOUSLY**. The unit has a lens focused on a near-field for smaller codes (optimal focal point is 4 inches) and one lens focused on a far-field for larger codes (optimal focal point 9 inches). To read smaller symbols move the VS 2030 closer to the symbol. To read larger symbols move the unit farther away from the symbol. The entire VS 2030 decode zone varies between two (2") and twenty (20+") or more inches. **For postal codes the range is between eight (8") and ten (10") inches.**

3. Hold the VS 2030 steady - **DO NOT SWIPE OR MOVE THE READER.** Press the trigger until the VS 2030 beeps, indicating the code has been successfully decoded.

4. The reader may be optimized to your specific environment by scanning codes in Chapter 2.

1.9 - Imager Field of View and Resolution

The VS 2030's dual field optical system may be modified based on your scanning environment. The VS 2030's megapixel imager may be set to the following three modes:
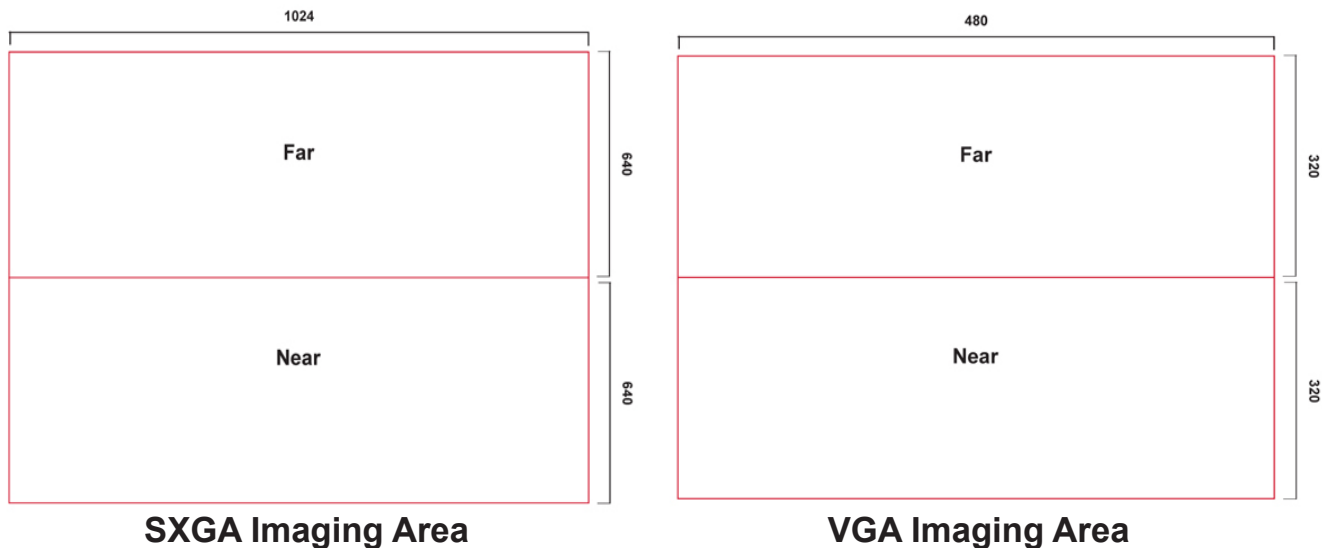
DOT Mode (Dynamic Optimization Technology): DOT dynamically changes the resolution mode of the reader between VGA and SXGA. DOT adapts the resolution based on varying environmental criteria, and types of symbologies being scanned. This mode works best if you are working with multiple types of symbologies of varying sizes.

Note: If you are scanning mostly medium to large 2D or 1D codes, you may want to choose VGA. If you are scanning mostly small or densely packed codes, SXGA may be the better choice. It is recommended to experiment with all three modes to determine the best reading performance for your application.
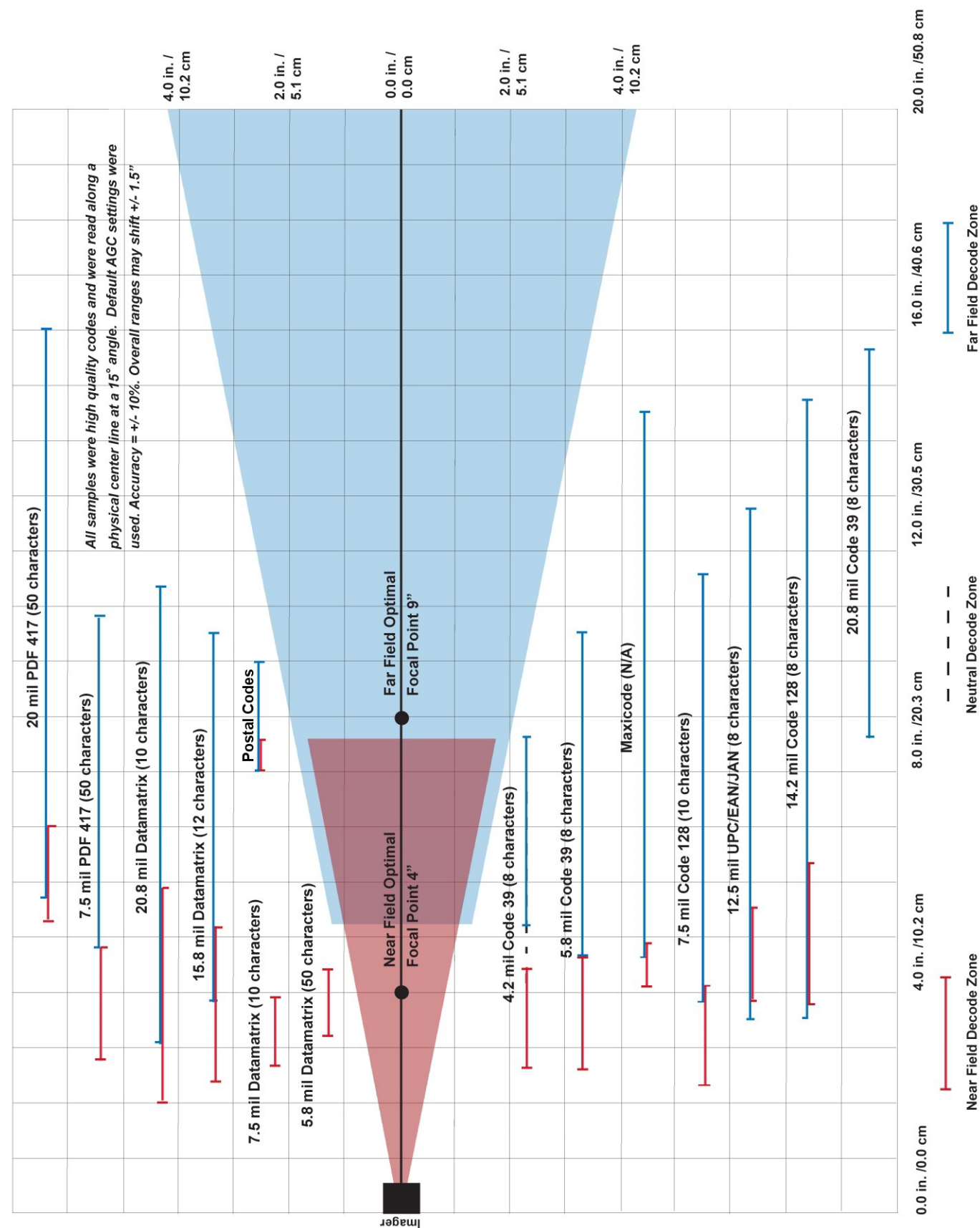
SXGA Mode: In standard SXGA mode (default), the 1.3 Million Pixel imager is divided into near field and far field decode zones. In each zone the resolution is 1024 x 640 pixels. In this mode of operation the reader utilizes the highest resolution creating the widest working range on bar code and 2-dimensional symbols of all densities. The trade-off is the amount of time the reader spends processing the image. This time can be reduced by optimization functions:

If only the near field is used (small, high density symbols), the far field image can be ignored. If only the far field is used (large, lower density symbols), the near field can be ignored.   Further optimization may be obtained by "windowing" the field to a smaller area. Each focal area may be narrowed by enabling the windowing feature found in section 9.3.

VGA Mode: In VGA mode (optional selection), the 1.3 Million Pixels are sampled on a 4-to-1 basis. This greatly reduces the amount of time necessary for the transfer of the image to the CPU and the resulting processing time. The trade-off for this increased speed is a reduction in resolution and working range.

SXGA Imaging Area

VGA Imaging Area

M188_02

1.10 - Decode Zone

Chart axis labels (top, left to right): 4.0 in. / 10.2 cm, 2.0 in. / 5.1 cm, 0.0 in. / 0.0 cm, 2.0 in. / 5.1 cm, 4.0 in. / 10.2 cm

Chart axis labels (right, top to bottom): 20.0 in. /50.8 cm, 16.0 in. /40.6 cm, 12.0 in. /30.5 cm, 8.0 in. /20.3 cm, 4.0 in. /10.2 cm, 0.0 in. /0.0 cm

All samples were high quality codes and were read along a physical center line at a 15° angle. Default AGC settings were used. Accuracy = +/- 10%. Overall ranges may shift +/- 1.5"

Labels: 20 mil PDF 417 (50 characters); 7.5 mil PDF 417 (50 characters); 20.8 mil Datamatrix (10 characters); 15.8 mil Datamatrix (12 characters); Postal Codes; 7.5 mil Datamatrix (10 characters); 5.8 mil Datamatrix (50 characters); Near Field Optimal Focal Point 4"; Far Field Optimal Focal Point 9"; 4.2 mil Code 39 (8 characters); 5.8 mil Code 39 (8 characters); Maxicode (N/A); 7.5 mil Code 128 (10 characters); 12.5 mil UPC/EAN/JAN (8 characters); 14.2 mil Code 128 (8 characters); 20.8 mil Code 39 (8 characters)

Legend: Far Field Decode Zone; Neutral Decode Zone; Near Field Decode Zone

Imager

M188_02

1.11 - Removing and Attaching Handle

The battery-handle must be attached to the VisionSensor 2030 for proper operation.

The battery automatically charges every time the USB interface is attached to the VisionSensor 2030 and the host PC is powered up.

Attaching the Battery Handle

Step 1: Begin assembly by inserting the tab at the back of the handle into the reader's battery compartment.

Step 2: Push the reader forward snugly against the handle.

Step 3: Snap the reader to the handle. Assembly is complete.

Note: To further secure the reader to the handle use the two screws included in shipment (optional). The screws are located on the underside of the reader.

Removing Reader from Handle

First remove the two screws (if used) from the underside of the handle. Next, release the battery compartment clip as shown, then remove the reader from the handle.

An optional battery charger cradle is available. Please contact Videk for additional information.

Chapter 2 - Optimization and Trigger Programming

2.1 - Introduction

The VS 2030 comes pre-configured with Dynamic Optimization Technology (DOT), a revolutionary adaptive read technique that eliminates the need to manually set most individual parameters. From the moment you turn on your VS 2030, you are taking full advantage of the dual path 1.3 megapixel imager, the 400 MHz processor, and DOT.

DOT continuously adapts the resolution, illumination, and image field for optimized automatic symbology identification. DOT achieves decoding speeds for 2D codes that are similar to speeds usually only seen in 1D readers. VS 2030 units are able to read a wide range of symbology types and sizes, as well as a variety of printed media, within a wide range of environmental factors including light (natural or ambient lighting).

By defining if you are scanning large, small, or different sizes of multiple types of codes, types of symbologies), (1D or 2D) and densities of the codes, the VS 2030 offers options for set up that will maximize decoding speed.

The chart below shows options that will improve performance based on parameters listed in each box.

	SXGA	VGA	DOT
Both Fields	**SB** High density codes Medium to Small size 2D	**VB** Medium/low density codes Medium to large size 1D or 2D	**AB** Low to high density codes Small to large size 1D or 2D *Factory Default Setting
Near Field	**SN** High density codes Small size 2D	**VN** Medium/low density codes Medium size 1D or 2D	**AN** Low to high density codes Small to medium size 1D or 2D
Far Field	**SF** High density codes Medium size 2D	**VF** Medium/low density codes Large size 1D	**AF** Low to high density codes Medium to large size 1D or 2D

The VS 2030 is easily customizable; each trigger can be independently programmed for different behavior. With DOT, optimizing the VS 2030 is as simple as deciding which Field of View is best and what type and size of symbologies are being scanned.

Near Field (NF): The nearest field of the VS 2030's two image fields. The Near Field has the highest resolution (1024 x 640 DPI). It has an optimal focal point of 4" (101.6 mm) away from the lens of the reader. It has a maximum focal distance of 8.5" with a 3" field of view at the farthest point. It has an overall viewing angle of 21º by 12 º.

Far Field (FF): The farthest field of the VS 2030's two image fields. The Far Field has the lowest resolution (480 x 320 DPI). It has an optimal focal point of 9" (228.6 mm) away from the lens of the reader with a 4" wide field of view at this point.

The following tables provide the code to program all or individual triggers to perform with different parameters.

2.2 - Global Trigger Optimization Matrix

	SXGA	**VGA**	**DOT**
Both Fields	M613_02	M616_02	M619_02
Near Field	M614_02	M617_02	M620_02
Far Field	M615_02	M618_02	M621_02

2.3 - Left Trigger Optimization Matrix

	SXGA	VGA	DOT
Both Fields	M631_02	M634_02	M637_02
Near Field	M632_02	M635_02	M638_02
Far Field	M633_02	M636_02	M639_02

2.4 - Left Trigger Programming

Scan the following codes to set the left trigger functionality:

Read Codes with Both Imagers (Default)

M178_01

Read with Far-Field Imager ONLY

M176_01

Read with Near-Field Imager ONLY

M177_01

Take Picture

M179_01

2.5 - Right Trigger Optimization Matrix

	SXGA	**VGA**	**DOT**
Both Fields	M640_02	M643_02	M646_02
Near Field	M641_02	M644_02	M647_02
Far Field	M642_02	M645_02	M648_02

2.6 - Right Trigger Programming

Scan the following codes to set the right trigger functionality:

Read Codes with Both Imagers (Default)

M185_01

Read Code with Far-Field Imager ONLY

M183_01

Read Code with Near-Field Imager ONLY

M184_01

Take Picture

M186_01

2.7 - Handle Optimization Matrix

	SXGA	VGA	DOT
Both Fields	M622_03	M625_03	M628_03
Near Field	M623_03	M626_03	M629_03
Far Field	M624_03	M627_03	M630_03

2.8 - Handle Trigger Programming

Scan the following codes to set the handle trigger functionality:

Read Codes with Both Imagers (Default)

M157_03

Read Code with Far-Field Imager ONLY

M155_03

Read Code with Near-Field Imager ONLY

M156_03

Take Picture

M154_04

Save Settings

M188_02

2.9 - Continuous Trigger Optimization Matrix

	SXGA	VGA	DOT
Both Fields	M649_02	M652_02	M655_02
Near Field	M650_02	M653_02	M656_02
Far Field	M651_02	M654_02	M657_02

2.10 - Continuous Scan

Scan the following codes to turn continuous scanning on/off:

Both Near & Far Field On

M138_01

Near Field Only On

M140_01

Far Field Only On

M139_01

Off (Default)

M141_02

Note: This function is only recommended for cabled or short term use if battery is the only power supply. See section 7.4.1 for Sleep Time Out Settings

2.11 - Continuous Scan Settings

2.11.1 - Continuous Scan - Sleep Time Out

Scan one of the codes below to set the amount of time a cabled VS 2030 will operate in continuous scan mode before entering sleep mode:

Cabled - 2 hours

M136_01

Cabled - Always (Default)

M137_01

Scan one of the codes below to set the amount of time an uncabled VS 2030 will operate in continuous scan mode before entering sleep mode:

Uncabled - 5 minutes (Default)

M145_01

Uncabled - 15 Minutes

M146_01

Uncabled - 30 Minutes

M147_01

Note: This function is only recommended for short term use because of battery consumption.

2.11.2 - Continuous Scan - Trigger Delays

Scan the following codes to set delay time between scans:

0 Seconds (Default)

M142_01

1 Second

M143_01

3 Seconds

M144_01

2.11.3 - Continuous Scan - Duplicate Scan Suppression

Scan the following codes to set the period of time during which duplicate codes are ignored:

0 Seconds (Default)

M222_01

1 Second

M223_01

3 Seconds

M224_01

2.12 - Motion Detection Scan Settings

Scan the following codes to set the reader to read when it detects motion in its scanning zone.

Motion Detection On

M701_01

Motion Detection Off

M702_01

Save Settings

M188_02

Chapter 3 - VS 2030 Programming: Symbology Settings

3.1 - Introduction

The following chapter will allow a user to change the symbology settings on the VS 2030. To reset the unit to factory defaults or to save the current settings please scan one of the codes below:

Save Settings

M188_02

Reset to USB Factory Defaults

M049_03

Reset to RS232 Factory Defaults

M418_02

Clear All CodeXML Rules

M052_01

Readers are shipped from manufacturing with initial communication settings that are hardware dependent.

Note: If you do not save your settings and the VS 2030 loses power you will lose your settings.

3.2 - Aztec Symbology

Scan the following codes to enable/disable Aztec symbology settings:

Aztec On

M273_01

Aztec Off (Default)

M272_01

Sample Aztec Code

3.3 - Codabar Symbology

Scan the following codes to enable/disable Codabar symbology settings:

Codabar On (Default)

M275_01

Codabar Off

M274_01

Sample Codabar

A123456789A

3.4 - Codablock F Symbology

Scan the following codes to enable/disable Codablock F symbology settings:

Codablock F On

M277_01

Codablock F Off (Default)

M276_01

Sample Codablock F Code

Note: When Codablock F and Code 128 decoding are enabled, there is some danger of mistakenly decoding a damaged Codablock F symbol as a Code 128 symbol. Therefore, Code 128 decoding should be disabled when Codablock F decoding is enabled.

3.5 - Code 11 Symbology

Scan the following codes to enable/disable Code 11 symbology settings:

Code 11 On (Default)

M393_01

Code 11 Off

M394_01

Code 11 Checksum 1 digit

M395_01

Code 11 Checksum 2 Digit & Stripped from Result

M396_01

Code 11 Checksum 1 Digit & Stripped from Result

M397_01

Code 11 Sample with 1 Checksum Digit

3.6 - Code 39 Symbology

Scan the following codes to enable/disable Code 39 symbology settings:

Code 39 On (Default)

M235_01

Code 39 Off

M234_01

Enable Checksum

M237_01

Disable Checksum (Default)

M236_01

Enable Checksum and Strip From Result

M238_01

Code 39 Extended Full ASCII On

M233_01

Code 39 Extended Full ASCII Off (Default)

M232_01

Save Settings

M188_02

Code 39 Short Margin On

M390_01

Code 39 Short Margin Off (Default)

M389_01

Code 39 Trioptic On

M671_01

Code 39 Trioptic Off

M670_01

Sample Code 39 Code

123456789

Sample Trioptic Code 39

123456

3.7 - Code 93 Symbology

Scan the following codes to enable/disable Code 93 symbology settings:

Code 93 On (Default)

M281_02

Code 93 Off

M280_01

Sample Code 93 Code

123456789

3.8 - Code 128 Symbology

Scan the following codes to enable/disable Code 128 symbology settings:

Code 128 On (Default)

M283_01

Code 128 Off

M282_01

Code 128 Short Margin On

M392_01

Code 128 Short Margin Off (Default)

M391_01

Sample Code 128 Code

12345678912345

Save Settings

M188_02

3.9 - Composite Symbologies

Scan the following codes to enable/disable Composite symbology settings:

Composite On

M285_02

Composite Off (Default)

M284_02

3.10 - Data Matrix Symbology

Scan the following codes to enable/disable Data Matrix symbology settings:

Allow All Data Matrix Codes (Default)

V1007_01

Allow Only Data Matrix Configuration Codes

V1006_01

Data Matrix Rectangle On (Default)

M242_01

Data Matrix Rectangle Off

M241_01

Data Matrix Inverse On

M239_01

Data Matrix Inverse Off (Default)

M240_01

Sample Data Matrix Code

Sample Data Matrix Code

3.11 - Interleaved 2 of 5 Symbology

Scan the following codes to enable/disable Interleaved 2 of 5 symbology settings:

Int 2 of 5 On (Default)

M244_01

Int 2 of 5 Off

M243_01

Int 2 of 5 Two Digits On

M246_01

Int 2 of 5 Two Digits Off

M245_02

Int 2 of 5 Four Digits On

M248_01

Int 2 of 5 Four Digits Off

M247_01

Sample Int 2 of 5 Code

123456789

3.12 - Maxicode Symbology

Scan the following codes to enable/disable Maxicode symbology settings:

Maxicode On

M289_04

Maxicode Off (Default)

M288_01

Sample Maxicode

Save Settings

M188_02
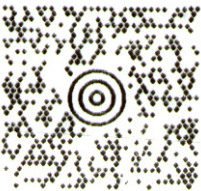
3.13 - Matrix 2 of 5 Symbology

Scan the following codes to enable/disable Matrix 2 of 5 symbology settings:

Matrix 2 of 5 On

M675_01

Matrix 2 of 5 Off (Default)

M674_01

Matrix 2 of 5 Sample

0 1 2 3 4 5 6 7 8 9

3.14 - Micro PDF417 Symbology

Scan the following codes to enable/disable micro PDF 417 symbology settings:

MicroPDF417 On

M301_01

MicroPDF417 Off (Default)

M300_01

Sample MicroPDF417

3.15 - MSI Plessy Symbology

Scan the following codes to enable/disable MSI Plessy symbology settings:

MSI Plessy On

M291_01

MSI Plessy Off   (Default)

M290_01

Sample MSI Plessy

123456789

3.16 - NEC 2 of 5 Symbology

Scan the following codes to enable/disable NEC 2 of 5 symbology settings:

NEC 2 of 5 On

M673_01

NEC 2 of 5 Off   (Default)

M672_01

3.17 - PDF 417 Symbology

Scan the following codes to enable/disable PDF 417 symbology settings:

PDF 417 On (Default)

M293_01

PDF417 Off

M292_01

Macro PDF 417 On

M287_01

Macro PDF 417 Off (Default)

M286_01

Sample PDF 417 Code

3.18 - Pharmacode

For an explanation of Pharmacode settings and all programming codes please refer to Appendix C.

3.19 - Postal Symbologies

Scan the following codes to enable the appropriate Postal symbology:

Note: If you wish to change which Basic Postal code is activated, you MUST scan the disable all postal codes symbol and then scan your desired symbology. EXCEPT for the Advanced Postal Codes (4-CB/OneCode and ID Tag) which are configured independently of the Basic Postal Codes.

Australian Post On

M252_01

Japan Post On

M253_01

KIX

M254_01

Planet On

M256_01

Postnet On

M257_01

Postnet and Planet On

(Default)

M255_01

Postnet Strip Check Character (Default)

V1004_01

Postnet Do Not Strip Check Character

V1005_01

Royal Mail On

M258_01

Disable All Postal Codes EXCEPT 4-CB & IDTag

M259_01

Sample Postnet Code

3.20 - Advanced Postal Symbologies

The USPS 4-State Customer Barcode is also known as the OneCode, 4-CB, or USPS 4-State.

The default data output for UK ID Tag decodes follows a unique format that requires a special license, please contact Videk for further information

Scan the following codes to enable the appropriate Advanced Postal symbology:

Note: The Advanced Postal Codes are configured independently of the Basic Postal Codes.

USPS 4-State On (Default)

V1002_01

USPS 4-State Off

V1003_01

Sample USPS 4-State Customer Barcode

ID Tag/S18D On (Default)

V1000_01

ID Tag/S18D Off

V1001_01

Sample ID Tag/S18D

UK ID Tag On (Default)

V1010_01

UK ID Tag Off

V1011_01

UK ID Tag

Save Settings
M188_02

3.21 - QR Code Symbology

Scan the following codes to enable/disable QR Code symbology settings:

QR Code On

M261_01

QR Code Off (Default)

M260_01

Enable Checksum

M265_01

Disable Checksum (Default)

M264_01

QR Code Inverse On

M262_01

Both Inverse and Standard On

M263_01

All QR On (includes Micro QR)

M609_03

Inverse QR and Micro QR On

M687_03

Sample QR Code

Sample Micro QR

3.22 - RSS Symbology

Scan the following codes to enable/disable RSS symbology settings:

RSS Limited On

M268_01

RSS 14 and RSS 14 Truncated On

M271_01

RSS 14 Stacked On

M270_01

RSS Expanded On

M269_01

All RSS On

M267_01

All RSS Off (Default)

M266_01

Sample RSS Limited Code

Sample RSS 14 Code

Sample RSS 14 Truncated Code

Sample RSS 14 Stacked Code

3.23 - Telepen Symbology

Scan the following codes to enable/disable Telepen symbology settings:

Telepen On - Default

M677_01

Telepen Off

M676_01

Sample Telepen

3.24 - UPC/EAN/JAN

Scan the following codes to enable/disable UPC/EAN/JAN symbology settings:

UPC On (Default)

M295_01

UPC Off

M294_01

UPC Short Margin Enabled

M299_01

UPC Short Margin Disabled (Default)

M298_01

UPC Extension On

M297_01

UPC Extension Off

M296_01

Sample UPC A Code

1 23456 78912 8

Chapter 4 - Reader Feedback and Special Settings

4.1 - Volume and Vibration Settings

Scan the following codes to set vibration mode:

Vibrate On / Beep On

M107_01

Vibrate On / Beep Off

M109_01

Vibrate Off / Beep On (Default)

M108_01

Scan the following codes to set your reader's volume:

Beep Off

M110_01

Beep Low

M111_01

Beep High (Default)

M112_01

Scan the following codes to set the volume for keypad button press sounds:

Off (Default)

M697_02

Low

M698_03

Medium

M697_02

High

M700_03

4.2 - Code Readability Index

The Readability Index provides a measurement of a specific symbol's ease or difficulty to be decoded by the VS 2030. The Readability Index is specific to the VS 2030, and should not be confused with a verification quality measurement.

The Readability Index is a blend of information obtained from the internal operations of the decoding algorithm pertaining to contrast, symbology construct, error detection, forward error correction (if applicable), and other symbology-specific characteristics.

The Readability Index is a score on a scale of 01 (very poor) to 100 (very readable). Due to differences based on motion, skew, reflection, focus, and ambient lighting, the Readability Index on the same symbol may vary somewhat from read to read. However, a poor contrast or damaged symbol will score lower than a high contrast undamaged symbol. The Readability Index can be used as a quick check on the reliability of label generation or marking systems. When used in conjunction with the VS 2030 stand (or fixed mount positioning) which fixes the distance from the reader to the symbol, and constant ambient light, the Readability Index provides a symbol quality assurance tool and check point for feedback to an overall label or marking quality control system.

The Readability Index is enabled by first reading a CodeXML rule into the permanent VS 2030 Memory:

Code Readability Index Rule:

M061_02
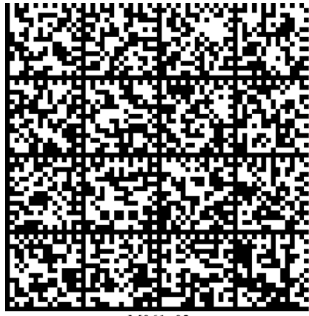
The reader will store the rule and reset, but will not output the Readability Index until the Readability Index Output Enable code is read.

Readability Index Output Enable (Default):

M062_02

Each time a data symbol is read, the index will be output, followed by a comma, (,) followed by the decoded data.

The Reader will continue to output the Readability Index upon every read until disabled, either by reset or by reading the Readability Index Output Disable code:

Readability Index Output Disable:

M063_02

4.3 - Backlight Intensity Settings

Scan the following codes to set the intensity of the VS 2030's backlight with High being the brightest and Low being the dimmest:

Low

M678_03

Med - Default

M679_03

High

M680_03

4.4 - Backlight Timeout Settings

Scan the following codes to set the backlight settings:

Backlight Off

M686_05

3 seconds (Default)

M681_03

6 seconds

M682_03

10 seconds

M683_03

4.5 - Laser Settings

Scan the following codes to turn laser targeting on/off:

On (Default)

M055_01

Off

M054_01

Scan one of the following codes to set the brightness of the VS 2030 laser.

High (Default)

M058_01

Medium

M057_01

Low

M056_01

4.6 - Reader Power Off Settings

Scan the following codes to set the amount of time before a reader powers off:

1 Hour

M691_02

2 Hours - Default

M688_02

4 Hours

M689_02

Press and hold any red trigger on the reader (for three seconds) to power on a unit.

4.7 - Reader ID and Firmware Version

To find out the Reader ID and firmware version, plug your VisionSensor 2030 into your USB or RS232 cable, open a text editor program (i.e. Notepad, Microsoft Word...) and read the following code:

Reader ID and Firmware

M153_01

You will get a text string with your firmware version and VisionSensor™ 2030 ID number (serial number):

Example: `Xap/i33083266none0010010969A07D0016VS-3.1.1000`
Template: `Xap/iaaaabbbbccccddddddddddeffggggghh-h.h.hhhh`

`Xap/i` - internal product ID (5 char)

`aaaa` - base firmware version number (4 char), `3308` in above example

`bbbb` - bootloader firmware version number (4 char), `3266` in above example

`cccc` - radio firmware version number (4 char), `none` in above example

`dddddddddd` - reader serial number (10 char), `0010010969` in above example

`e` is "A" if running firmware is the application, "B" if bootloader (1 char), `A` in above example

`ff` - supplemental internal ID (2 char), `07` in above example

`ggggg` - display flag and flash file system version (5 char), `D0016` in above example

`hh-h.h.hhhh` - application firmware ver number (11 char), `VS-3.1.1000` in above example

Additional control characters will also appear in the output string.

Note: Videk will periodically release new firmware for VisionSensor™ 2030 units. For information on latest firmware versions, call Videk at (585) 292-6210 or (800) 248-4335. To upgrade the firmware please visit Videk Website at http://www.videk.com/support/downloads.htm and follow instructions.

4.8 - Reader Settings Lock

To lock or unlock the current settings on your reader please scan the codes below:

Reader Settings Locked

M429_01

Reader Settings Unlocked

M428_01

NOTE: Prefix and Suffix programming codes, memory transfer and delete commands, "Clear All CodeXML Rules" and "Suffix -Erase/None" commands are not locked by this feature.

M188_02

Save Settings

4.9 - Keyboard Support

Scan the following codes to set appropriate keyboard mapping:

**US English (Default)
No Leading 0**

M172_01

US English - Leading 0

M602_01

US English - ctrl + char

M606_01

French

M603_01

German

M604_01

Japanese

M605_01

Universal Keyboard

M173_01

Custom Keyboard

M171_01

*Requests map to
be installed*

4.10 - Time Stamp Settings

VS 2030 has a battery-powered real time clock embedded in the reader. When enabled, the time stamp will be a prefix to the data. Time stamping continues until disabled. The time stamp will be shown in the following format: YYYY-MM-DD HH:MM:SS

On

M706_02

Off (Default)

M707_03

Note: Turning on the time stamp feature will cause the reader to re-start. Make sure previous settings have been saved prior to scanning the code or you will lose unsaved settings.

VS 2030 also has a separate time set feature for logging data (defaulted off in shipped units). If you enable the time set feature, every time the VS 2030 is powered off or rebooted, the timer will stop.
Scan the following codes to turn the time set on/off:

On

M200_02

Off (Default)

M199_02

Note: The time set feature is in relative time from when the reader was last powered up.

 Save Settings

M188_02

Chapter 5 - Advanced Decode Performance

5.1 - Continuous Illumination

Scan one of the following codes to enable continuous LED illumination.

Enable Continuous Illumination

M580_02

Disable Continuous Illumination (Default)

M579_02

Note: Videk recommends only using this feature with cabled units due to increased power consumption.

5.2 - Set Targeting Zone Tolerances

The targeting zone is the area around the outside of the code that is viewed by the imager. The values of each of the following codes are the pixels extending from the outside of the edge of the symbol being scanned. As the targeting zone becomes smaller the targeting laser must be more centered in the symbol being scanned. Conversely, as the targeting area outside the code gets larger there is less precision needed with the targeting laser. There is also a greater chance the imager will have more than one code in the field of view. The symbol in focus, closest to the targeting laser will be decoded.
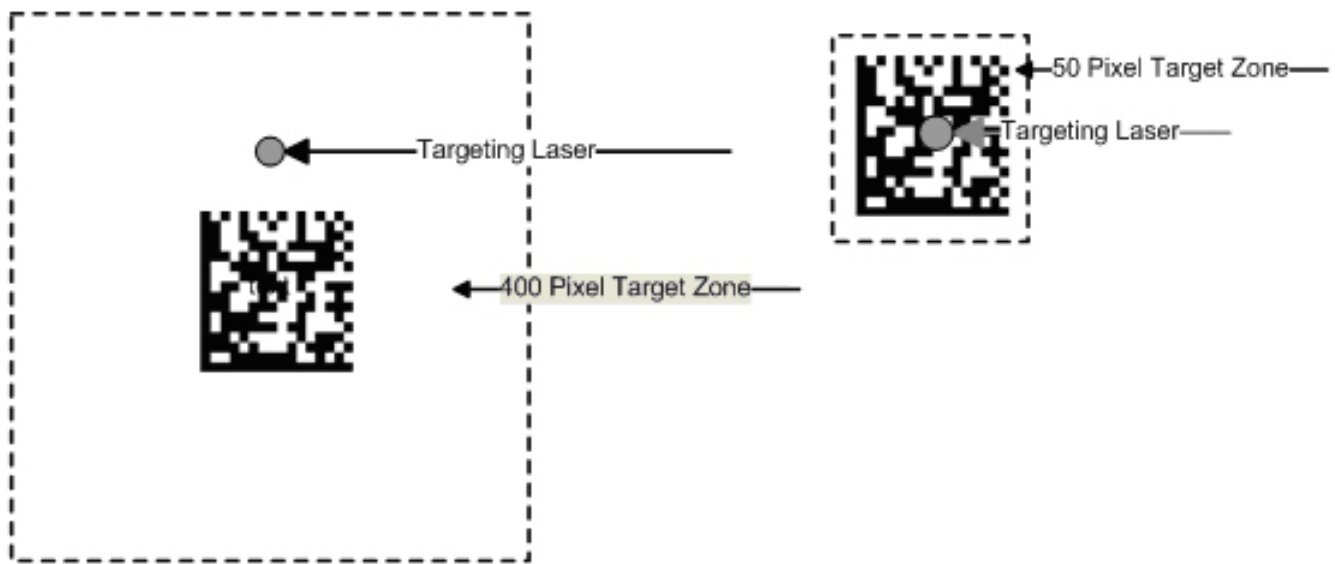
50 Most Accurate	**75**	**100**	**125**
M189_01	M190_01	M191_01	M192_01

150	**200**	**400**	**1600** (Default) Least Accurate
M193_01	M195_01	M194_01	M196_01

 Save Settings

M188_02

5.3 - Windowing

If only one size of bar code is being scanned in an application, the VS 2030 can be optimized to reduce processing time by adjusting the viewing frame within the field of view of the image (ONLY FOR SXGA MODE).

By reducing the vertical window value of the imager to 200 pixels, 1-D codes are processed more quickly. Because only a horizontal strip of a 1-D code is needed to be decoded, using a narrow strip of the imager is all that is needed. The area above and below the 200 pixels, which is always in the center of the imager, is ignored. This approach reduces the number of pixels that must be processed.

Windowing can improve the processing time of 1D and 2D codes.

You may negatively impact reader performance if the window size is too small. If it is necessary to have the reader farther away than normal to read the code, the window may be too small.

Reading other types of codes, especially large codes, may be difficult while using this setting.
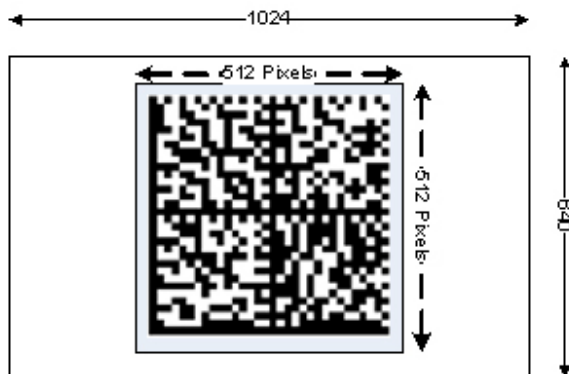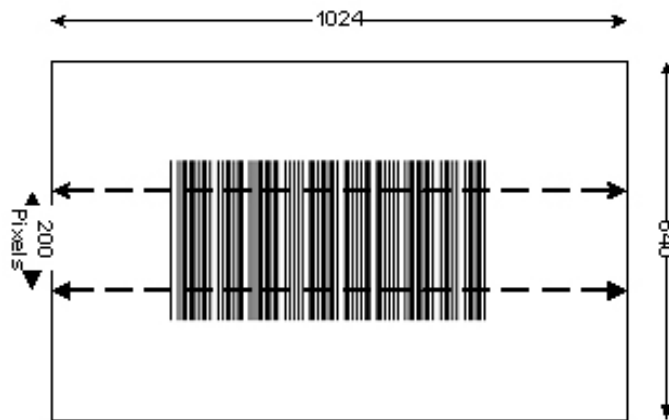
Medium Code Windowing
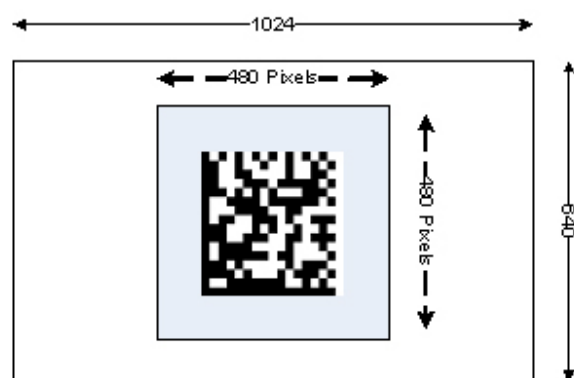
Small Code Windowing

M188_02

Users may optimize the VS 2030 decode zone if their application only requires one bar code format. If the size and density of the bar codes to be scanned are consistent, please select the setting below that best describes your environment (ONLY FOR SXGA MODE).

1-Dimensional Codes ONLY (1024 X 200 pixels)

M209_01

Caution: It may be more difficult to read other codes while in this setting. You must have the reader farther away than normal.

Small 2-Dimensional Codes (480 x 480 pixels)

M210_01

Medium 2-Dimensional Codes (512 x 512 pixels)

M211_01

Large 2-Dimensional Codes (640 x 640 pixels)

M212_01

Reset to Factory Default Setting (1024 X 640 pixels)

M213_01

5.4 - VGA & Megapixel Settings

User's may optimize the VS 2030's megapixel (SXGA) imager (1280 x 1024) to VGA (640 x 480). This feature is used to decrease the pixel sampling area, which will greatly increase processing speed. This is an advanced feature used for the rapid decoding of 1-dimensional/linear codes and larger module size 2-dimensional codes. Videk recommends testing this feature, as it will not work well with many high density codes.

Enable VGA - 640 x 480	**Enable SXGA - 1024 x 1280**	**Enable DOT (Default)**
M202_03	M201_03	M611_04

5.5 - Mirror Decoding

Scan the following codes to enable/disable the mirroring feature:

On	**Off (Default)**
M182_01	M181_02

Note: The Mirroring feature allows the VS 2030 to read codes as they are seen through a mirror (inversed 180°). If the Mirroring feature is enabled, all other code reading ability will be disabled.

Chapter 6 - Adding a Prefix or Suffix and Reader Text Commands

6.1 - Prefix Settings

If you scan the following codes, you will lose any unsaved settings. Make sure to save settings on your reader before scanning the prefix codes. If you scan more than one prefix you will receive each scanned prefix in your scanned data; (i.e., if you scan comma prefix twice, you will get two comma prefixes). Scan the following codes to set appropriate prefix:

Prefix - Comma
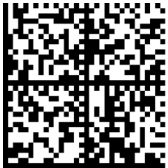
M159_02

Prefix - Space
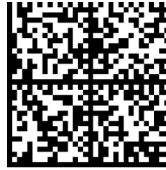
M164_02

Prefix - Tab (USB Mode)

M166_01

Prefix - Tab

M218_02

Prefix - Erase
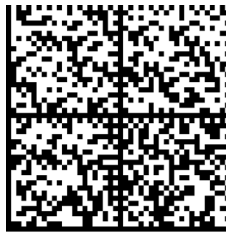
M404_01

This code will erase all prefix data.

Prefix - Carriage Return Line Feed

M214_02

Only Use with Serial Applications

Note: If you require a special configuration, please contact Videk at (585) 292-6210 or (800) 24-VIDEK.

6.2 - Suffix Settings

If you scan the following codes, you may lose your current settings. Make sure to save settings on your reader before scanning the Suffix codes. If you scan more than one suffix you will receive each scanned suffix in your scanned data; (i.e., if you scan comma suffix twice, you will get two comma suffixes). Scan the following codes to set appropriate suffix:

Suffix - Carriage Return

M168_04

Only Use with Serial Applications

Suffix - Comma

M160_04

Suffix - Line Feed

M169_04

Only Use with Serial Applications

Suffix - Carriage Return Line Feed

M170_04

Only Use with Serial Applications

Suffix - Space

M165_04

Suffix - Enter

M161_04

Only Use with USB or Keyboard Mode

Save Settings

M188_02

Suffix - Tab
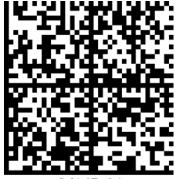
M167_04

Only Use with USB Keyboard

Suffix - Tab

M219_04

Only Use with Serial Application

Suffix - Erase / None

M405_02

This code will erase all suffix data.

6.3 - Erase Prefix and Suffix Settings

Scan the following codes to erase all prefix and suffix data.

Erase Prefix & Suffix Data

M406_02

6.4 - Reader Text Commands

Enabling Reader Text Commands allows the VS 2030 to accept text commands via RS232 communication. Scan the following codes to enable/disable reader text commands:

Reader Text Commands On

M198_01

Reader Text Commands Off - Default

M197_01

Note: Text commands can only be sent to the reader when it is active.

M188_02
Save Settings

Chapter 7 - VS 2030: Maintenance and Troubleshooting

7.1 - Reset Reader to Factory Defaults

Scan the following codes to reset reader:

Reset to USB Factory Default Settings

M049_03

Reset to RS232 Factory Default Settings

M418_02

Bootloader Mode

M692_01

Bootloader mode is utilized to download new version of bootloader firmware and custom applications.

Clear All CodeXML Rules Prefix & Suffix

M052_01

Clear All Stored Data

M071_01

Save Settings

M188_02

Note: If you scan these codes, you may lose your current settings. Make sure to save settings on your reader before scanning the above codes.

7.2 - General Safety Information

Repairs and Adjustments - Only those individuals authorized by Videk should attempt to make repairs or adjustments to VS 2030 equipment. If the reader casing is opened the warranty is voided.

Power Supply - Use only the power supply provided for use with each specific unit when operating Videk equipment.

Accessories - Only those accessories approved by Videk should be utilized with Videk equipment. Non-compliance with any of the above may result in:

- Injury to individuals handling the equipment;
- Damage to the equipment; and
- Voiding of the maintenance contract.

Lasers - The VS 2030 utilizes a laser **FOR TARGETING PURPOSES ONLY.** If the laser is activated, do not stare into the beam. See pg. i for further information regarding laser warnings.

Lithium Ion Battery - Warning: Charge the battery with Videk cables ONLY. Do not open battery, dispose of in fire, or short circuit - it may ignite, explode, leak, or get hot causing personal injury.

7.3 - Warranty

Videk, Inc.'s VisionSensor 2030 carries a two year limited warranty as described herein.

Limited Warranty

Videk manufactures its hardware products in accordance with industry-standard practices. Videk warrants its products will be free from defects in materials and workmanship, provided that the products are used under normal operating condition intended by the Manufacturer. This warranty is provided to the original owner only and is not transferable to any third party. This warranty is subject to any and all accompanying disclaimers, limitations and other terms of this section.

Terms of Warranty

VisionSensor 2030 units carry a warranty of two years. Products with serial numbers, such as but not limited to reader units, handles and battery chargers, are warranted for a period of two (2) years from date of shipment. Non-serialized items, such as but not limited to cables, will carry a 90-day limited warranty.

Exclusions

No warranty herein contained or set out shall apply to any product (i) which has been repaired, altered or tampered with unless done or approved by Videk, (ii) which has not been maintained in accordance with any operating or handling instructions supplied by Videk, (iii) which has been subjected to unusual physical or electrical stress, immersion in fluids, puncture, crushing, misuse, abuse, power shortage, improper power supply such as incorrect voltage or wrong polarity, negligence or accident, or (iv) which has been used other than in accordance with the product operating and handling instructions. Preventive maintenance is the responsibility of the customer and is not covered under this warranty.

Warranty Coverage and Procedure

During the warranty period, Videk will repair or replace defective products returned to Videk's service center in the US. For worldwide warranty service call Videk Warranty Support at (585) 292-6210 or (800) 24-VIDEK.

If warranty service is required, Videk will issue a Return Material Authorization Number. Products must be shipped in the original or comparable packaging, with shipping and insurance charges prepaid. Videk will ship the repaired or replacement product freight and insurance prepaid in North America. Shipments from the US or other locations will be made F.O.B. Videk's manufacturing plant. Videk will use new or refurbished parts at its discretion and will own all parts removed from repaired products. Customer will pay for any pre-shipped replacement product in case it does not return the replaced product to Videk within 7 days of receipt of the replacement product. The process for return and customer's charges will be in accordance with Videk's Exchange Policy in effect at the time of the exchange.

Customer accepts full responsibility for its software and data including the appropriate backup thereof. Repair or replacement of a product during warranty will not extend the original warranty term. Videk's Customer Service organization offers an array of service plans, such as on-site, depot, or phone support, that can be implemented to meet customer's special operational requirements and are available at a substantial discount during warranty period.

General

EXCEPT FOR THE WARRANTIES STATED ABOVE, CODE DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, ON PRODUCTS FURNISHED HEREUNDER, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT. The stated express warranties are in lieu of all obligations or liabilities on part of Videk for damages, including without limitation, special, indirect, or consequential damages arising out of or in connection with the use or performance of the product. Seller's liability for damages to buyer or others (regardless of the form of action, whether by contract, warranty, tort, malpractice, and/or otherwise) resulting from the use of any product, shall in no way exceed the purchase price of said product. In no event shall Videk be liable for any consequential, special, indirect, incidental or punitive damages, or for any loss of profits, revenue or data, even if Videk has been advised of the possibility thereof.

7.4 - VS 2030 Accessories

Please visit www.videk.com for more information on Videk accessories.

7.5 - Troubleshooting

What can I do if my VisionSensor 2030 will not read a code?
1. Check that all of the connections are good.
2. Make sure that you are 8 to 10 inches away from the code that you are trying to read.
3. Make sure that the VisionSensor 2030 is within +/-45° from being perpendicular to the code
4. Do NOT move the VisionSensor 2030 while attempting to read a code. Hold it as steady as possible.
5. Make sure that the code is not smeared.
6. Make sure that the code is valid. As a check, try reading the "Sample Codes" throughout this document. These are known good codes.

7.6 - VS 2030 Maintenance

The VS 2030 device operates efficiently and reliably and needs only a minimum of maintenance to operate. A few tips are given below for maintenance suggestions.

Cleaning the VS 2030 Window

The VS 2030 window should be clean to allow the best performance of the device. The window is the clear plastic piece inside the head of the reader. Do not touch the window. Your VS 2030 uses CMOS technology that is much like a digital camera. A dirty window may stop the VS 2030 from reading codes.

If the window becomes dirty, clean it with a soft, non-abrasive cloth or a facial tissue (no lotions or additives) that has been moistened with water. A mild detergent may be used to clean the window, but the window should be wiped with a water moistened cloth or tissue after using the detergent.

The VS 2030 display screen and housing may be cleaned in the same way.

For applications that require cleaning with disinfectant, please use products with the following ingredients:

1) Isopropyl Alcohol
2) Ethyl Alcohol (Denatured Grade)

Videk does not recommend using bleach.

Technical Support and Returns

For returns or technical support call Videk Technical Support at (800) 292-6210 or (800) 24-VIDEK. For all returns Videk will issue an RMA number which must be placed on the packing slip when the reader is returned.

Appendix A - Reader Specifications

Physical Characteristics

Reader Dimensions:	1.6" H x 4.4" L x 1.8" W (4 cm H x 11 cm L x 5 cm W)
Battery Handle Dimensions:	5.5" H x 5" L x 2" W (14 cm H x 12 cm L x 5.1 cm W)
Reader Weight:	6.0 oz (172 grams)
Battery Handle Weight:	4.8 oz (136 grams)
Display:	128 x 128 Monochrome

Performance Characteristics

Field of View:	Near: 21.5º horizontal by 16.2º vertical
	Far: 22.9º horizontal by 11.6º vertical
Focal Point:	Near: approximately 4"; Far: approximately 9"
Sensor:	Progressive Scan CMOS 1.33 MP
	(1024x1280) 256 level gray scale
Optical Resolution:	Near Field: 1024 x 640; Far Field: 1024 x 640
Pitch:	± 60 ° (from front to back)
Skew:	± 60 ° from plane parallel to symbol (side-to-side)
Rotational Tolerance:	± 180 °
Print Contrast Resolution:	25% (1-D symbologies) or 35% (PDF417) absolute dark/light
	reflectance differential, measured at 650 nm
Target Beam:	Class IIa Visible Laser Diode at 630nm
Ambient Light Immunity:	Sunlight: Up to 9,000 ft-candles/96,890 lux
Shock:	Withstands multiple drops of 4 feet to concrete
Power Requirements:	Reader @ 4.2Vdc - Peak (w/backlight) = 400mA;
	Continuous Scan (w/backlight) = 350mA;
	Idle (no backlight) = 150mA; Sleep = 12mA; Power Off = 0.5uA
	Continuous Scan (w/backlight) = 400mA; Peak (w/backlight)
	= 525mA; Idle (no backlight) = 250mA
Optional Cable Interfaces:	USB (Full Speed), RS232
Code Quality:	Code Readability Index
Memory:	4MB of memory for data and user programs

User Environment

Operating Temperature:	0 ° to 40 ° C/32 ° to 104 ° F
Storage Temperature:	-20 ° to 60 ° C/-4 ° to 140 ° F
Humidity:	5% to 95% non condensing
Decode Capability:	Posnet, Planet, 4-CB, IDTag/S18D, UK ID Tag, Japanese Post,
	Australian Post, Royal Mail, KIX, MaxiCode, PDF417 (inc'l, Macro)
	Data Matrix, QR Code, MicroPDF417, Composite,
	Code 11, Aztec, Code 39, Code 128, Pharmacode,
	UPC/EAN/JAN, Int 2 of 5, Codabar, Codablock F,
	Code 93, RSS, MSI Plessy, NEC 2 of 5,
	Matrix 2 of 5, Telepen, Micro QR Code, Trioptic
Image Output Options:	Formats: JPEG, Raw (Uncompressed)
Field Selection:	Near or Far
Resolution Selection:	1024 x 640 (Multiple Window Options)
Grayscale:	256 Level
Real Time Clock:	7 year On-Board Battery Backup

Appendix B - Mechanical & Electrical Specifications

Dimensions

USB Connector - Pin Out Diagram

Connector A

Connector B

6.0FT±1.0INCHES
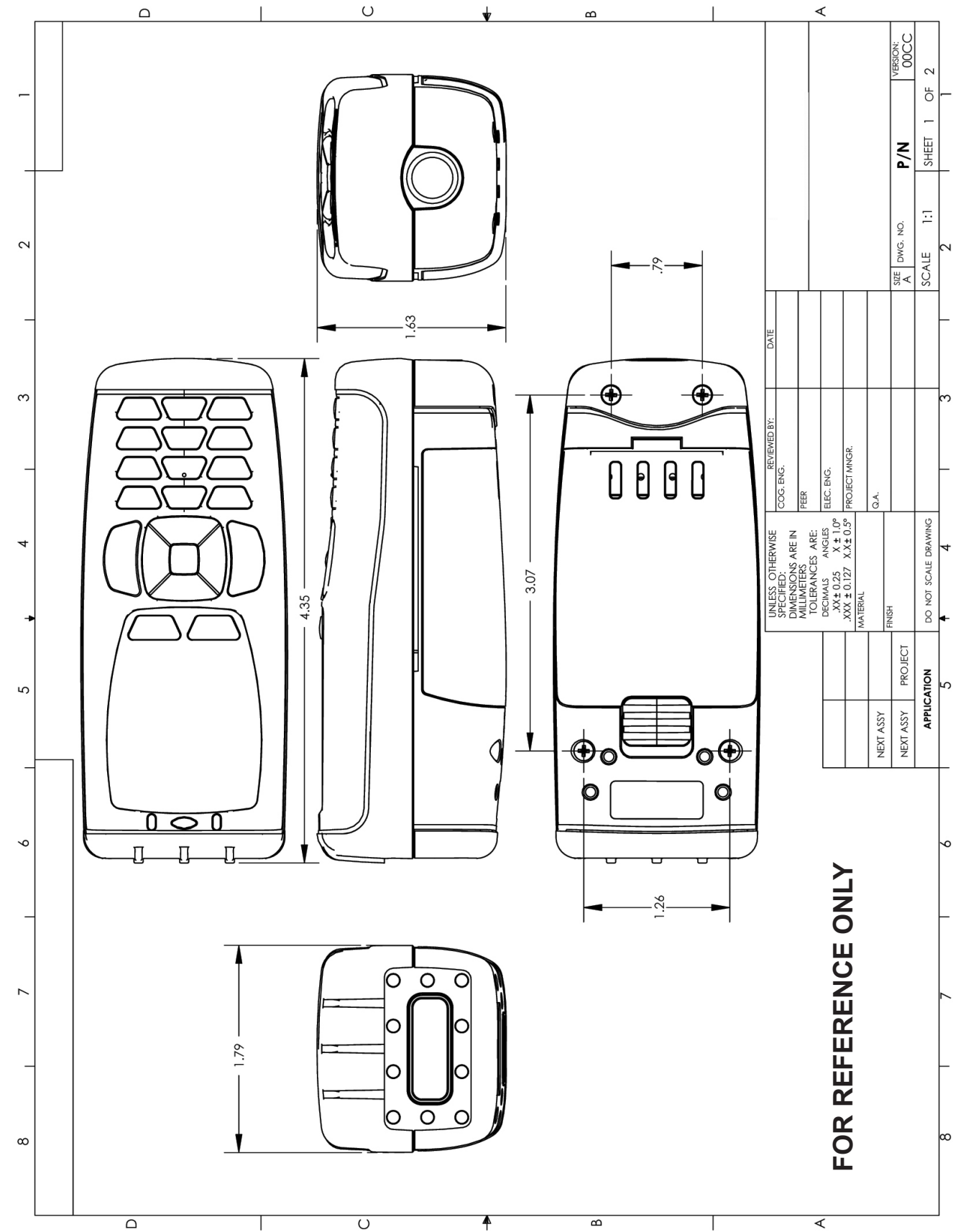
Connector A

Connector B
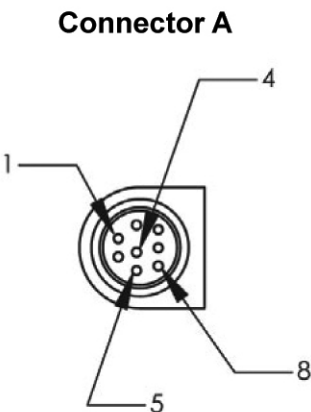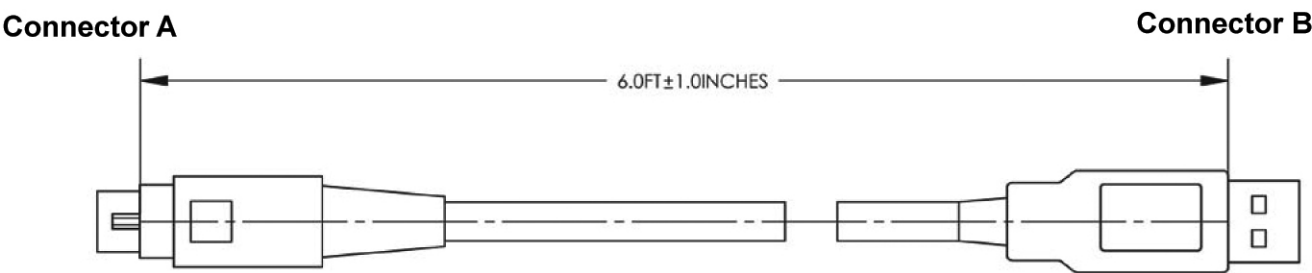
WIRING TABLE:

CONN A	NAME	WIRE	COLOR	CONN B
1	V+	24AWG	RED	1
2	NC			
3	NC			
4	D+	28AWG	GREEN (TWISTED)	3
5	D-	28AWG	WHITE (TWISTED)	2
6	NC			
7	NC			
8	GND	24AWG	BLACK	4
SHELL	—	DRAIN	BARE	SHELL
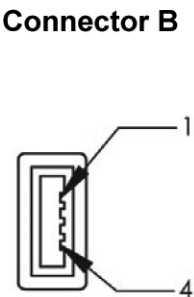
maximum voltage tolerance = 5V +/- 10%

CAUTION: Exceeding the maximum voltage will void manufacturers warranty.

8 Pin DIN Connector - Pin Out Diagram

3	4	5	6	7	8
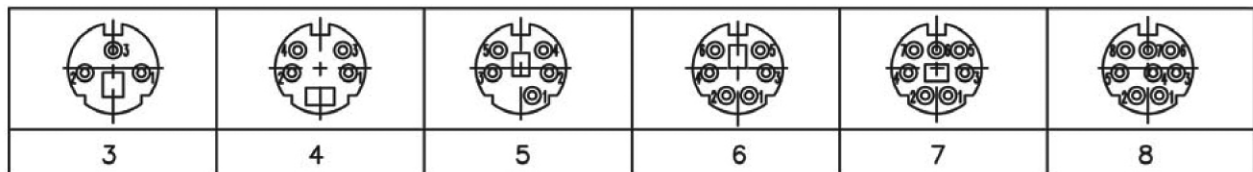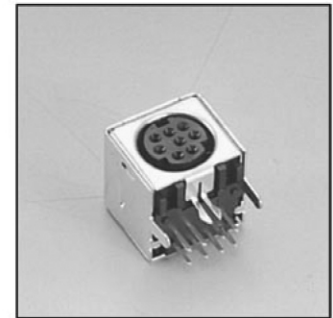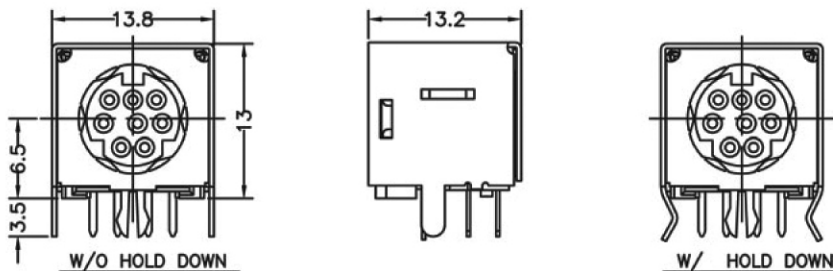
PIN 1   VIN - Input Voltage to the voltage regulators/batter charging IC

PIN 2   RS232_TX - RS-232 level serial transmit signal

PIN 3   RS232_RX - RS-232 level serial receive signal

PIN 4   PS2_DATA_UART_RX_USB_DP - PS2 clk to host/ UART transmit signal/ USB Data plus signal

PIN 5   PS2_DATA_UART_RX_USB_DM - PS2 data to host or keyboard/ UART receive signal/ USB Data minus signal

PIN 6   PS2_CLK_KB - PS2 clock signal to the keyboard

PIN 7   ~TRIG - trigger from the handle

PIN 8   GND - signal ground

RS232 Connector - Pin Out Diagram

Connector B

Connector A

7IN ±1IN

3.5FT ±1IN

Connector B

Connector C

Connector A

Connector B

6.5IN ±.5IN

1

9

8

2

1

3

- **Center Pin OD 2.0 mm, Length 8.5 mm**
- **Mating Plug OD: 5.5 mm**

Input: + 5V ═ ┅ ═ Min 500 mA

⊕ ● ⊖
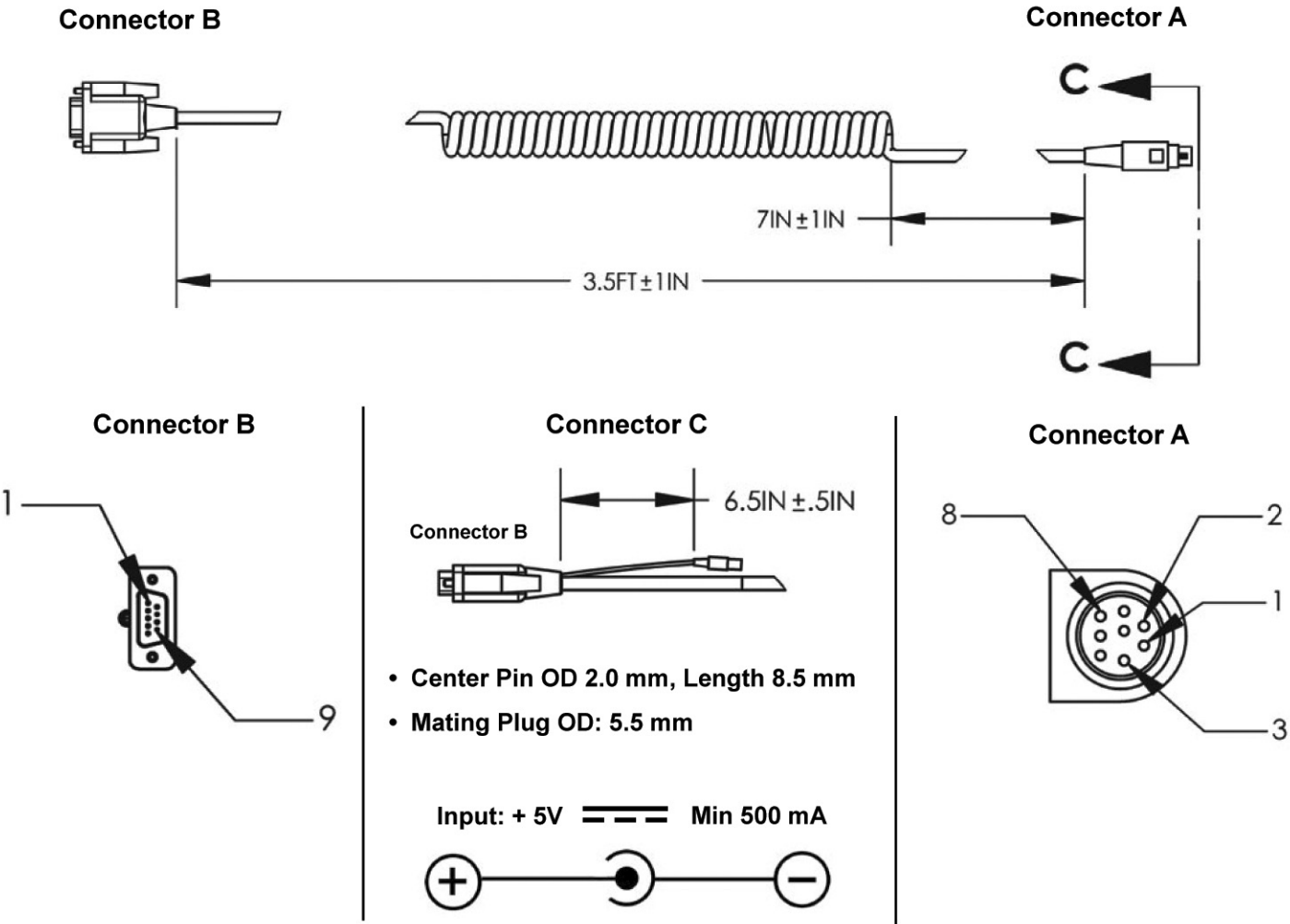
WIRING DIAGRAM:

CONN A	NAME	WIRE	COLOR	CONN B	WIRE	COLOR	CONN C
1	V+	24AWG	RED	1	24AWG	RED	TIP
2	TX	28AWG	BROWN	2			
3	RX	28AWG	ORANGE	3			
4	NC						
5	NC						
6	NC						
7	NC						
8	GND	24AWG	BLACK	5	24AWG	BLACK	RING
9	NC						
SHELL	---	DRAIN	BARE	SHELL			

* SEE WIRING DIAGRAM BELOW FOR CONN A PIN 1, CONN B PIN 1 AND CONN C TIP
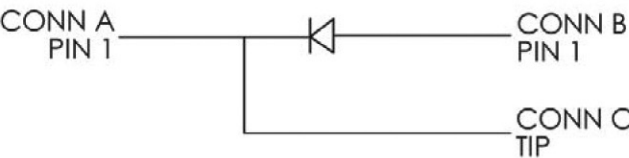
CONN A PIN 1 ▷| CONN B PIN 1

CONN C TIP

maximum voltage tolerance = 5V +/- 10%

CAUTION: Exceeding the maximum voltage will void manufacturers warranty.

Appendix C - Pharmacode Settings

Pharmacode Settings

The Pharmacode symbology is prone to errant results caused by other objects within the field of view of a Code Reader. Therefore, all possible measures should be taken to minimize errors. Measures include:

- Setting the minimum and maximum number of bars
- Setting the minimum and maximum amount of data
- Restricting the processing region or allowable "footprint" size of code
- Identify the characteristics of the target symbols

Correct decoding depends upon the proper selection of one of these sets of characteristics:

Enable PharmaCode - No Color Bars, Horizontal Orientation and Standard (left to right) Decoding

M409_01

Enable Pharmacode - Color Bars Expected, Horizontal Orientation and Standard (left to right) Decoding

M410_01

Enable Pharmacode - No Color Bars, Vertical Orientation and Standard (left to right) Decoding

M411_01

Enable Pharmacode - Color Bars Expected, Vertical Orientation and Standard (left to right) Decoding

M412_01

Enable Pharmacode - No Color Bars, Horizontal Orientation and Reverse (right to left) Decoding

M413_01

Pharmacode Settings (con't)

Enable Pharmacode - Color Bars Expected, Horizontal Orientation and Reverse (right to left) Decoding

M414_01

Enable Pharmacode - No Color Bars, Vertical Orientation and Reverse (right to left) Decoding

M415_01

Enable Pharmacode - Color Bars Expected, Vertical Orientation and Reverse (right to left) Decoding

M416_01

Disable Pharmacode

M408_01

NOTE: Decoding that is performed in the "standard" direction considers left bars more significant than right bars for horizontal symbols and top bars more significant than bottom bars for vertical symbols. Decoding is performed in the "reverse" direction considers right bars more significant than left bars for horizontal symbols; bottom bars more significant than top bars for vertical symbols.

Appendix D - Factory Default Settings

Default Settings

The following are the primary default settings for your VisionSensor 2030. Refer to the manual text for secondary default settings that relate to specific code types or other reader attributes.

Symbology Defaults:

Aztec ....OFF
Codabar... ON
Codablock F ....OFF
Code 11 .... ON
Code 39... ON
Code 93... ON
Code 128.. ON
Composite ....OFF
Data Matrix .... ON
Interleaved 2 of 5.. ON
Matrix 2 of 5..OFF
MaxiCode ....OFF
MacroPDF417 ....OFF
MicroPDF417 ....OFF
MSI Plessy ....OFF
NEC 2 of 5...OFF
PDF417 .... ON
Pharmacode ....OFF
Postal Codes (ONLY the following: Posnet, Planet, 4-CB, ID Tag/S18D, UK ID Tag)............................ ON
QR Code ....OFF
RSS ....OFF
Telepen.. ON
UPC/EAN/JAN.. ON

Control Setting Defaults:

Communication Mode .... USB Keyboard
Left Button ....All Decodes
Right Button...All Decodes
Handle .... Both Near and Far
Beeper Volume .... High
Vibrate Off / Beep On ....Enabled
Keypad Button Press Sounds .... Off
Backlight Intensity .... Medium
Backlight Timeout..3 Seconds
Reader Power Off (Sleep)... 2 Hours
Time Stamp ....OFF
Continuous Scan ....OFF

Code Readability Index Output ....Enabled

Default Settings (con't)

RS-232 Interface Setting Defaults

You must scan the RS-232 commuincation settings code to switch the reader in RS-232 communication mode. When enabled your unit will default to the following settings:

Mode: RS232 One Way Mode

Baud Rate: 57600

Stop Bits: 2

Data Bits: 8

Parity: None

Batch Mode Setting Defaults

Your unit will recognize when the USB cable is detached and automatically switch into batch mode with the following settings.

Auto Storage Erase: ON

Send and Store: OFF

RS-232 Connected: ON

Appendix E - Programming Codes

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Continous Trigger Optimization and Settings

Symbologies

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VS 2030 Programming Codes

Batch Send & Buffer Mode - Default M075_01 **A1**	**Batch - Log Only Mode** M072_01 **A2**	**Batch - Send & Log Mode** M076_01 **A3**	**Batch - Transfer All Data in Memory** M077_02 **A4**
Batch - Transfer Only Unsent Data in Memory M078_02 **B1**	**Batch - Delete Scanned Data from Memory** M071_01 **B2**	**Batch - Enable Auto Transfer Buffer Memory** M070_01 **B3**	**Batch - Disable Auto Transfer Buffer Memory** M069_01 **B4**
RS232 Batch - Cable Detect - Default M073_02 **C1**	**RS232 Cabled - No Power** M074_02 **C2**	**USB Keyboard Mode** M134_02 **C3**	**USB Downloader Mode** M133_01 **C4**
USB Native Two Way Mode M135_04 **D1**	**USB Virtual COM 1 Way Mode** M668_01 **D2**	**Reset to USB Factory Defaults** M049_03 **D3**	**RS232 One Way Mode** M131_01 **D4**
RS232 Two Way Mode M132_01 **E1**	**RS232 Interface 7 Data Bits** M100_01 **E2**	**RS232 Interface 8 Data Bits - Default** M101_01 **E3**	**RS232 Interface 2 Stop Bits - Default** M106_01 **E4**
RS232 Interface Even Parity M102_01 **F1**	**RS232 Interface Odd Parity** M104_01 **F2**	**RS232 Interface No Parity - Default** M103_01 **F3**	**Reset to RS232 Factory Defaults** M418_02 **F4**

Save Settings

M188_02

VS 2030 Programming Codes

RS232 Interface **1200 Baud Rate** M092_01 **A1**	**RS232 Interface** **2400 Baud Rate** M093_01 **A2**	**RS232 Interface** **4800 Baud Rate** M094_01 **A3**	**RS232 Interface** **9600 Baud Rate** M095_01 **A4**
RS232 Interface **19200 Baud Rate** M096_01 **B1**	**RS232 Interface** **38400 Baud Rate** M097_01 **B2**	**RS232 Interface** **57600 Baud Rate - Default** M098_01 **B3**	**RS232 Interface** **115200 Baud Rate** M099_01 **B4**
Prefix - Comma M159_02 **C1**	**Prefix - Space** M164_02 **C2**	**Prefix - Tab** **(USB Keyboard Mode ONLY)** M166_01 **C3**	**Prefix - Tab** **(RS232 Mode ONLY)** M218_02 **C4**
Prefix - Erase/None - Default M404_01 **D1**	**Prefix - CRLF** M214_02 **D2**	**Suffix - Carriage Return** M168_04 **D3**	**Suffix - Comma** M160_04 **D4**
Suffix - Line Feed M169_04 **E1**	**Suffix** **Carriage Return Line Feed** M170_04 **E2**	**Suffix - Space** M165_04 **E3**	**Suffix - Enter** M161_04 **E4**
Suffix - Tab **(USB Keyboard Mode ONLY)** M167_04 **F1**	**Suffix - Tab** **(RS232 Mode ONLY)** M219_04 **F2**	**Suffix - Erase/None** **- Default** M163_01 **F3**	**Erase Prefix & Suffix Data** M406_02 **F4**

Save Settings

M188_02

VS 2030 Programming Codes

Global Trigger Optimization SXGA - Both Fields M613_02 **A1**	**Global Trigger Optimization VGA - Both Fields** M616_02 **A2**	**Global Trigger Optimization DOT - Both Fields** M619_02 **A3**	**Global Trigger Optimization SXGA - Near Field** M614_02 **A4**
Global Trigger Optimization VGA - Near Field M617_02 **B1**	**Global Trigger Optimization DOT - Near Field** M620_02 **B2**	**Global Trigger Optimization SXGA - Far Field** M615_02 **B3**	**Global Trigger Optimization VGA - Far Field** M618_02 **B4**
Global Trigger Optimization DOT - Far Field M621_02 **C1**	**Left Trigger Optimization SXGA - Both Fields** M631_02 **C2**	**Left Trigger Optimization VGA - Both Fields** M634_02 **C3**	**Left Trigger Optimization DOT - Both Fields** M637_02 **C4**
Left Trigger Optimization SXGA - Near Field M632_02 **D1**	**Left Trigger Optimization VGA - Near Field** M635_02 **D2**	**Left Trigger Optimization DOT - Near Field** M638_02 **D3**	**Left Trigger Optimization SXGA - Far Field** M633_02 **D4**
Left Trigger Optimization VGA - Far Field M636_02 **E1**	**Left Trigger Optimization DOT - Far Field** M639_02 **E2**	**Left Trigger - Read with Both Imagers - Default** M178_01 **E3**	**Left Trigger - Read with Far Field Imager Only** M176_01 **E4**
Left Trigger - Read with Near Field Imager Only M177_01 **F1**	**Left Trigger - Take Picture** M179_01 **F2**	**Right Trigger Optimization SXGA - Both Fields** M640_02 **F3**	**Right Trigger Optimization VGA - Both Fields** M643_02 **F4**

Save Settings
M188_02

VS 2030 Programming Codes

Right Trigger Optimization DOT - Both Fields M646_02 **A1**	**Right Trigger Optimization SXGA - Near Field** M641_02 **A2**	**Right Trigger Optimization VGA - Near Field** M644_02 **A3**	**Right Trigger Optimization DOT - Near Field** M647_02 **A4**
Right Trigger Optimization SXGA - Far Field M642_02 **B1**	**Right Trigger Optimization VGA - Far Field** M645_02 **B2**	**Right Trigger Optimization DOT - Far Field** M648_02 **B3**	**Right Trigger - Read with Both Imagers - Default** M185_01 **B4**
Right Trigger - Read with Far Field Imager Only M183_01 **C1**	**Right Trigger - Read with Near Field Imager Only** M184_01 **C2**	**Right Trigger - Take Picture** M186_01 **C3**	**Handle Trigger Optimization SXGA - Both Fields** M622_03 **C4**
Handle Trigger Optimization VGA - Both Fields M625_03 **D1**	**Handle Trigger Optimization DOT - Both Fields** M628_03 **D2**	**Handle Trigger Optimization SXGA - Near Field** M623_03 **D3**	**Handle Trigger Optimization VGA - Near Field** M626_03 **D4**
Handle Trigger Optimization DOT - Near Field M629_03 **E1**	**Handle Trigger Optimization SXGA - Far Field** M624_03 **E2**	**Handle Trigger Optimization VGA - Far Field** M627_03 **E3**	**Handle Trigger Optimization DOT - Far Field** M630_03 **E4**
Handle Trigger - Read with Both Imagers - Default M157_03 **F1**	**Handle Trigger - Read with Far Field Imager Only** M155_03 **F2**	**Handle Trigger - Read with Near Field Imager Only** M156_03 **F3**	**Handle Trigger - Take Picture** M154_04 **F4**

Save Settings

M188_02

VS 2030 Programming Codes

Continous Trigger Optimization SXGA - Both Fields M649_02 **A1**	**Continous Trigger Optimization VGA - Both Fields** M652_02 **A2**	**Continous Trigger Optimization DOT - Both Fields** M655_02 **A3**	**Continous Trigger Optimization SXGA - Near Field** M650_02 **A4**
Continous Trigger Optimization VGA - Near Field M653_02 **B1**	**Continous Trigger Optimization DOT - Near Field** M656_02 **B2**	**Continous Trigger Optimization SXGA - Far Field** M651_02 **B3**	**Continous Trigger Optimization VGA - Far Field** M654_02 **B4**
Continous Trigger Optimization DOT - Far Field M657_02 **C1**	**Continuous Scan - Both Imagers** M138_01 **C2**	**Continuous Scan - Near Field Imager Only** M140_01 **C3**	**Continuous Scan - Far Field Imager Only** M139_01 **C4**
Continuous Scan - Off Default M141_02 **D1**	**Continous Scan Time Out Cabled - 2 hours Default** M136_01 **D2**	**Continuous Scan Time Out Cabled - Always** M137_01 **D3**	**Continuous Scan Time Out Uncabled - 5 minutes - Default** M145_01 **D4**
Continous Scan Time Out Uncabled - 15 minutes M146_01 **E1**	**Continous Scan Time Out Uncabled - 30 minutes** M147_01 **E2**	**Continuous Scan Trigger Delay (0 Sec.) Default** M142_01 **E3**	**Continuous Scan Trigger Delay (1 Sec.)** M143_01 **E4**
Continuous Scan Trigger Delay (3 Sec.) M144_01 **F1**	**Continuous Scan Duplicate Scan Delay (0 Sec.) - Default** M222_01 **F2**	**Continuous Scan Duplicate Scan Delay (1 Sec.)** M223_01 **F3**	**Continuous Scan Duplicate Scan Delay (3 Sec.)** M224_01 **F4**

Save Settings
M188_02

VS 2030 Programming Codes

Aztec On	Aztec Off - Default	Codabar On - Default	Codabar Off
M273_01	M272_01	M275_01	M274_01
A1	A2	A3	A4

Codablock F On	Codablock F Off - Default	Code 11 Off	Code 11 On - Default
M277_01	M276_01	M393_01	M394_01
B1	B2	B3	B4

Code 11 - Checksum 1 digit	Code 11 - Checksum 2 digit & Strip from Result	Code 11 - Checksum 1 digit & Strip from Result	Code 39 On - Default
M395_01	M396_01	M397_01	M235_01
C1	C2	C3	C4

Code 39 Off	Code 39 Enable Checksum	Code 39 Disable Checksum - Default	Code 39 Enable Checksum and Strip
M234_01	M237_01	M236_01	M238_01
D1	D2	D3	D4

Code 39 Extended Full ASCII On	Code 39 Extended Full ASCII Off - Default	Code 39 Short Margin On	Code 39 Short Margin Off - Default
M233_01	M232_01	M390_01	M389_01
E1	E2	E3	E4

Code 39 Trioptic On	Code 39 Trioptic Off	Code 93 On - Default	Code 93 Off
M671_01	M670_01	M281_02	M280_01
F1	F2	F3	F4

Save Settings

M188_02

VS 2030 Programming Codes

Code 128 On - Default	Code 128 Off	Code 128 Short Margin On	Code 128 Short Margin Off - Default
M283_01	M282_01	M392_01	M391_01
A1	**A2**	**A3**	**A4**

Composite On - Default	Composite Off	Allow ALL Data Matrix Codes - Default	Allow ONLY Programming Data Matirx Codes
M285_02	M284_02	V1007_01	V1006_01
B1	**B2**	**B3**	**B4**

Data Matrix Rectangle On	Data Matrix Rectangle Off	Data Matrix Inverse On	Data Matrix Inverse Off - Default
M242_01	M241_01	M239_01	M240_01
C1	**C2**	**C3**	**C4**

I 2 of 5 On - Default	I 2 of 5 Off	I 2 of 5 2 Digits On	I 2 of 5 2 Digits Off - Default
M244_01	M243_01	M246_01	M245_02
D1	**D2**	**D3**	**D4**

I 2 of 5 4 Digits On	I 2 of 5 4 Digits Off - Default	I 2 of 5 with Control Character Stripped	Intentionally Blank
M248_01	M247_01	M685_01	
E1	**E2**	**E3**	**E4**

Matrix 2 of 5 On	Matrix 2 of 5 Off Default	MSI Plessy On	MSI Plessy Off - Default
M675_01	M674_01	M291_01	M290_01
F1	**F2**	**F3**	**F4**

Save Settings

M188_02

VS 2030 Programming Codes

Maxicode On	Maxicode Off - Default	Micro PDF417 On	Micro PDF417 Off - Default
M289_04	M288_01	M301_01	M300_01
A1	A2	A3	A4

PDF 417 On - Default	PDF 417 Off	Macro PDF 417 On	Macro PDF 417 Off - Default
M293_01	M292_01	M287_01	M286_01
B1	B2	B3	B4

NEC 2 of 5 On	NEC 2 of 5 Off - Default	All Postal Codes Off EXCEPT USPS 4-State and ID Tag/S18D	Postal Codes Planet & Postnet On - Default
M673_01	M672_01	M259_01	M255_01
C1	C2	C3	C4

Postal Codes Planet On	Postal Codes Postnet On	Postal Codes Postnet: Strip Check Character - Default	Postal Codes Postnet: Do NOT Strip Check Character
M256_01	M257_01	V1004_01	V1005_01
D1	D2	D3	D4

Postal Codes Australian Post On	Postal Codes Japan Post On	Postal Codes KIX On	Postal Codes Royal Mail On
M252_01	M253_01	M254_01	M258_01
E1	E2	E3	E4

Postal Codes ID Tag/S18D On - Default	Postal Codes ID Tag/S18D Off	Postal Codes USPS 4-State On - Default	Postal Codes USPS 4-State Off
V1000_01	V1001_01	V1002_01	V1003_01
F1	F2	F3	F4

Save Settings

M188_02

VS 2030 Programming Codes

Postnet Strip Check Character - Default	Postnet Do Not Strip Check Character	UK ID Tag On - Default	UK ID Tag Off
V1004_01	V1005_01	V1010_01	V1011_01
A1	A2	A3	A4
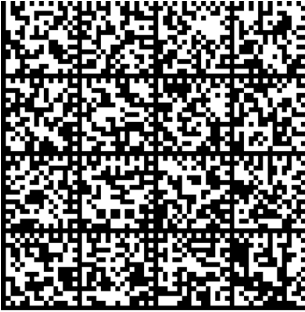
VS 2030 Programming Codes

QR Code On M261_01 **A1**	**QR Code Off - Default** M260_01 **A2**	**QR Code Enable Checksum** M265_01 **A3**	**QR Code Disable Checksum** M264_01 **A4**
QR Code Inverse On M262_01 **B1**	**QR Code Inverse and Standard On** M263_01 **B2**	**Micro QR Code On** M609_03 **B3**	**Inverse and Micro QR Code On** M687_03 **B4**
QR & Micro QR Code On M667_01 **C1**	**All RSS On** M267_01 **C2**	**All RSS Off - Default** M266_01 **C3**	**Intentionally Blank** **C4**
RSS Limited On M268_01 **D1**	**RSS 14 & RSS Truncated 14 On** M271_01 **D2**	**RSS 14 Stacked On** M270_01 **D3**	**RSS Expanded On** M269_01 **D4**
Telepen - On - Default M677_01 **E1**	**Telepen - Off** M676_01 **E2**	**UPC On - Default** M295_01 **E3**	**UPC Off** M294_01 **E4**
UPC Short Margin Enabled M299_01 **F1**	**UPC Short Margin Disabled - Default** M298_01 **F2**	**UPC Extension On - Default** M297_01 **F3**	**UPC Extension Off** M296_01 **F4**

Save Settings
M188_02

VS 2030 Programming Codes

Intentionally Blank A1	**Intentionally Blank** A2	**Code Readability Index Rule** M061_02 B4
Readability Index Output Enabled - Default M062_02 B1	**Readability Index Output Disabled** M063_02 B2	

Clear All CodeXML Rules M052_01 C1	**Vibrate On Beep On** M107_01 C2	**Vibrate On Beep Off** M109_01 C3	**Vibrate Off Beep On - Default** M108_01 C4
Beep - Off M110_01 D1	**Beep - Low** M111_01 D2	**Beep - High - Default** M112_01 D3	**Intentionally Blank** D4
Backlight Intensity - Low M678_03 E1	**Backlight Intensity - Medium Default** M679_03 E2	**Backlight Intensity - High** M680_03 E3	**Intentionally Blank** E4
Backlight Off M686_05 F1	**Backlight Off - 3 seconds Default** M681_03 F2	**Backlight Off - 6 seconds** M682_03 F3	**Backlight Off - 10 seconds** M683_03 F4

Save Settings

M188_02

VS 2030 Programming Codes

Laser Targeting - On Default M055_01 A1	**Laser Brightness - Low** M056_01 A2	**Laser Brightness - Medium** M057_01 A3	**Laser Brightness - High Default** M058_01 A4
Laser Targeting - Off M054_01 B1	**Continous Illumination On** M580_02 B2	**Continous Illumination Off - Default** M579_02 B3	**Intentionally Blank** B4
Keypad Volume Off - Default M697_02 C1	**Keypad Volume Low** M698_03 C2	**Keypad Volume Medium** M699_03 C3	**Keypad Volume High** M700_03 C4
Reader Power Off - 1 Hour M691_02 D1	**Reader Power Off - 2 Hours Default** M688_02 D2	**Reader Power Off - 4 Hours** M689_02 D3	**Intentionally Blank** D4
Cabled Reader Active Time Out 2 Hours M136_01 E1	**Cabled Reader Time Out Never - Default** M137_01 E2	**Mirroring - On** M182_01 E3	**Mirroring - Off - Default** M181_02 E4
Motion Detection Scanning On M701_01 F1	**Motion Detection Off - Default** M702_01 F2	**US English Keyboard Mapping - Default No Leading 0** M172_01 F3	**US English Keyboard Mapping - Leading 0** M602_01 F4

Save Settings
M188_02

VS 2030 Programming Codes

US English - ctrl + char M606_01 A1	**Alt + Keypad Numbers** M173_01 A2	**Universal Keyboard Mapping** M173_01 A3	**Custom Keyboard Mapping** M171_01 A4
Japanese Keyboard M605_01 B1	**German Keyboard** M604_01 B2	**French Keyboard** M603_01 B3	**Intentionally Blank** B4
Targeting Zone Tolerances (50) M189_01 C1	**Targeting Zone Tolerances (75)** M190_01 C2	**Targeting Zone Tolerances (100)** M191_01 C3	**Targeting Zone Tolerances (125)** M192_01 C4
Targeting Zone Tolerances (150) M193_01 D1	**Targeting Zone Tolerances (200)** M195_01 D2	**Targeting Zone Tolerances (400)** M194_01 D3	**Targeting Zone Tolerances (1600)** M196_01 D4
Optimize Decode Zone 1-D Only (1024 x 200) M209_01 E1	**Optimize Decode Zone Small 2-D (480 x 480)** M210_01 E2	**Optimize Decode Zone Medium 2-D (512 x 512)** M211_01 E3	**Optimize Decode Zone Large 2-D (640 x 640)** M212_01 E4
Optimize Decode Zone Reset to Default (1024 x 640) M213_01 F1	**Enable VGA (640 x 480)** M202_03 F2	**Enable SXGA (1280 x 1024)** M201_03 F3	**Enable DOT - Default** M611_04 F4

Save Settings

M188_02

VS 2030 Programming Codes

Enable Time Stamp **(Units w/Real Time Clock)** M706_02 **A1**	**Disable Time Stamp** **(Units w/Real Time Clock)** M707_03 **A2**	**Reader Text** **Commands On** M198_01 **A3**	**Reader Text** **Commands Off - Default** M197_01 **A4**
Reader Settings **Locked** M429_01 **B1**	**Reader Settings** **Unlocked** M428_01 **B2**	**Lockout Link Mode** M710_02 **B3**	**Unlock Link Mode** M711_01 **B4**
Reader ID and **Firmware Version** M153_01 **C1**	**Save Settings** M188_02 **C2**	**Bootloader Mode** M692_01 **C3**	**Clear All Stored Data** M071_01 **C4**